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Consensual Coalitions?
Coalition Formation in Norwegian Municipalities.

Hovedoppgave, Institutt for statsvitenskap, Universitet i Oslo.

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Sammendrag

Koalisjonsteori har i liten grad blitt benyttet til prediksjon og forklaring av koalisjonsdannelser i lokalpolitikken. Denne studien benytter «klassiske» koalisjonsteori (Riker og Axelrod) for å kartlegge og belyse dannelsen av «ordførerkoalisjoner», dvs. gruppen av partier som stemte for den kandidaten som ble valgt til ordfører etter kommunevalget i 1995. Deretter belyses «utvalgskoalisjoner», dvs. gruppen av partier som har ordfører, vara-ordfører og lederne i kommunenes hovedutvalg/faste komitéer, vha. de samme teoriene. For første gang benyttes data fra et stort antall kommuner, noe som muliggjør en bruk av kvantitative metoder som er statistisk holdbar. Data stammer over 300 av Norges 435 kommuner. I ca. 40% av disse kommunene er ordførerkoalisjonen «minimal», dvs. at den ikke inneholder partier som ikke er nødvendig for å sikre et flertall i kommunestyret. I 30% er ordførerkoalisjonen «minimalt forbundet», dvs. at den er både minimal *og* forbundet langs en politisk konfliktdimensjon, her høyre-venstre-aksen. I motsetning til på nasjonalt nivå observeres flere rent minimale koalisjoner enn minimalt vinnende, noe som kan indikere at aktørene er mindre opptatt av nasjonalt baserte politiske mål enn av rent maktbaserte koalisjoner. Det samme forholdet er tilfelle blant utvalgskoalisjonene, men prosentandelene er langt lavere.

«Overtallige» koalisjoner, dvs. koalisjoner som inkluderer partier som ikke er nødvendige for å sikre et flertall eller for å gjøre koalisjonen forbundet, er et fenomen som er lite utforsket innen koalisjonsteori. Et flertall av de kommunale koalisjonene viser seg å være overtallige. Det antas at dette for en stor grad skyldes formannskapsmodellen og normen om konsensusbaserte beslutninger som antas å eksistere i kommunene. For å teste om andre forhold påvirker sannsynligheten for at overtallige koalisjoner vil dannes, analyseres ordførerkoalisjoner og utvalgskoalisjoner i en multivariat modell vha. logistisk regresjon. Overtallige koalisjoner antas å indikere et lavere konfliktnivå enn minimale/mindretallskoalisjoner. De observerte effektene er relativt beskjedne. Om ett parti har flertall i kommunestyret alene, øker sannsynligheten for at overtallige koalisjoner dannes, alt annet likt. Dette styrker antagelsen om konsensusorientering. Sannsynligheten øker også hvis en blokk av borgerlige partier kontrollerer flertallet, noe som kan indikere at den nasjonale blokkdelingen har en viss betydning også i lokalpolitikken. De andre uavhengige variablene gir mindre entydige resultater, men en svak tendens til økende konfliktnivå i mer «moderne» kommuner kan spores. Formannskapsmodellens ideal om konsensus synes å være fremherskende i koalisjonsdannelsen rundt valg til formelt viktige posisjoner i kommunepolitikken. Studien viser behovet for mer inngående

Preface

Several persons deserve thanks for their contributions to this thesis. First, I wish to express my gratitude to my supervisor Bjørn Erik Rasch at the University of Oslo for his highly valuable and substantial comments and criticisms. He has seen to that I have kept on track all the time. Second, Terje P. Hagen at the Norwegian Institute for Urban and Regional Research (NIBR) has used much of his time and resources to provide insightful comments and advice at all stages of this «project», from its initialisation to its very end. His encouragement and enthusiasm has been invaluable.

From 29 July - 2 August 1996, I participated at the course «Parliamentary Democracy and Political Parties» at the Oslo Summer School in Comparative Social Science Studies. To that course, I delivered a paper (Gravdahl 1996), which also constituted a first draft of parts of this thesis. The contents of the paper is scattered around in the thesis, and appear in more or less revised forms in the following parts: sections 1.2 and 2.1, subsections 2.2.1, 2.2.3 and 2.2.4; chapter 3; subsections 4.3.1 and 4.4.1; and chapter 5. I received comments on the paper from Kaare Strøm, University of California, San Diego, who was the lecturer of the course; Torbjörn Bergman, University of Umeå; Hilmar Rommetvedt, Rogaland Research; in addition I received comments from Rasch and Hagen. They should all be thanked.

I thank NIBR for financial support and for providing me with an office. At NIBR, I have also been allowed to join the activities of the «Research into local authority administration, organisation and governance group» (KOLOS). This has been highly inspirational to me. I also want to thank the members of KOLOS for devoting one of their bi-weekly seminars to a discussion on a revised version of the paper referred to above. This was very useful. Jan Fridthjof Bernt at the University of Bergen provided me with an insightful interpretation of some parts of the new Local Government Act which are central to my understanding of it in this thesis. Mary Bjærum revised my English. They should both be thanked. Thanks also to several local politicians for taking the time to explain various features of local politics in Norway, and how it «really» works.

I have tried to interpret and incorporate the insight of the comments and advice from all the abovementioned into this thesis. Sadly, however, I alone must bear the responsibility for the way this has been done.

Finally, I want to thank Christine Friestad for being the person she is. She is always there when needed (and *that* is pretty often).

Oslo, March 1997
Hans Petter Gravdahl

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> «Understanding how a given election result leads to a given government is, when all is said and done, simply one of the most important substantive projects in political science.»
>
> (Laver and Schofield 1990:89)

1 Introduction

1.1 Objective of the thesis

The term «coalition» is often used to denote a group of political parties co-operating on a single issue or on a more permanent basis. Among other things, the study of coalitions might contribute to an understanding of the motives of the political actors, and an understanding of the degree of conflict underlying the decisions reached. In this thesis, I intend to test the predictional ability of two of the «classical» coalition theories (based on works by William Riker (1962) and Robert Axelrod (1970)) on a hitherto poorly explored area: municipal coalitions.[1] [2] While widely applied to political coalitions in national assemblies and cabinets, these theories have hardly been put to the test using data from the local level of politics (cf. Mellors and Brearey 1986:279; Laver and Schofield 1990:8-9).[3]

[1] Laver and Schofield (1990) emphasise that the classical coalition theories hardly can be «tested» in the real meaning of the term. The theories predict a set of coalitions which can potentially be formed. In real political life, such a set is further limited by several contextual factors. «Used as an indication» may be a more correct term. In this essay, I shall use «test» and «indicate» interchangeably.

[2] The term «municipality» (*kommune*) denotes the Norwegian «[s]ubnational organisations that provide public services through a local democracy» (Fevolden et al. 1992:14; my translation. Here and everywhere else in this thesis, I am responsible for the translations from Norwegian into English).

[3] However, works, applying various approaches, include Denters (1985); the European Consortium for Political Research's (ECPR) workshops in Gothenburg 1986 (cf. Pridham 1988); Mellors and Breary (1986); Pridham 1988; Steunenberg (1992).

Riker (1962) assumes that political actors are driven by a desire for office, and have no policy preferences: the politicians strive to maximise their own utility, measured in gains from office. To test that hypothesis, predictions are derived, stating that «minimal coalitions» will be formed, that is, coalitions which contain no parties that are not needed to control a majority of the representatives in the assembly in question. Axelrod (1970) modifies this assumption somewhat; politicians are conceived as office-seekers, but policy preferences also matter to some degree. Axelrod bases his theory on an assumption concerning the part played by the «conflict of interest» within a coalition (cf. Laver and Schofield 1990). It will be easier to form coalitions with a lower internal conflict of interest, so prospective members will prefer these to other coalitions with greater internal conflict. A prediction is derived which states that coalitions both are minimal, winning and «connected», which means that the coalition parties are adjacent to each other on one important policy dimension.

At the national level, the success of the different theories varies. Comparative tests of Riker's and other «policy blind» theories have found that the minimal winning theory made correct predictions about what coalitions would be formed in about 40 per cent of all situations where no party has a legislative majority (Laver and Schofield 1990:95-96). On the other hand, when comparing the predictional performance of minimal connected winning (MCW) theory and minimal winning theory on European coalition cabinets, the performance of the former theory is superior (Laver and Schofield 1990:98-101).

It may be interesting to apply these theories to Norwegian municipalities for several reasons. In Norway, one of the differences between the national and the municipal political level is the lack of parliamentarism at local level. The political process in the municipalities is organised by the «Board of Aldermen» model, contributing to and emphasising an assumed norm of consensus and unity in the municipal councils. The parties try to reach decisions through discussion and exchange of options, rather than

by conflict-loaded debates ending with decisions based on political conflict-dimensions, reached by a ballot along political lines of demarcation (Hagen 1995a:7). Classifying parties as being in «opposition» or in «position» should not be necessary, then. Further, there are some important constraints on the ability to make independent policy decisions, and the cleavages at the local level do seldomly follow the national lines of demarcation (cf. Bukve 1996). Thus, it seems reasonable to expect other findings when the «classical» theories are applied to the municipalities, than when they are applied at national level, concerning both the degree of relevance of different types of motives and the conflictual climate.

Within the office-seeking approach, oversized coalitions, i.e., coalitions including parties not needed to control a majority of the representatives, are as hard to explain as minority coalitions (Laver and Schofield 1990:81). However, both exist, and at the municipal level, oversized coalitions often occur. The classical theories tested are of a deductive, formal character. In this thesis, I also put forward an inductively generated model of municipal coalition formation, predicting that oversized coalitions will be formed. The presence of oversized coalitions - with a few exceptions, to which I will return briefly to later - is poorly explained by coalition theory. I therefore also present and test inductively generated models which try to predict the probability of oversized coalitions being formed, given a set of independent variables. The intention is to shed some light on whether the formation of the oversized coalitions is due only to a norm of consensus. In other words, are the coalitions that are formed purely consensual?

Earlier coalition studies in Norway have been focused on the national level (e.g. Strøm 1990; Rommetvedt 1991), or they have been case-studies of single municipalities (e.g. Lotsberg 1989; Nordseth 1996). For the first time, data have been systematically collected by the Norwegian Institute for Urban and Regional Research (NIBR) from a large number of municipalities concerning which parties voted for the mayor

(*ordføreren*).[4] I use these data, together with data from all the municipalities concerning which parties control the important political positions in the municipality, to produce statistically significant observations on coalition formation in Norwegian municipalities. This will serve two purposes. One is to test the classical theories in a statistically sound manner. The other is to generate models to study the influence of several factors on the size of coalitions formed. In other words, the intention is to produce an *overview* of local coalition formation in Norway, to strengthen or weaken some of the ordinary «common sense» conceptions of local politics.[5]

1.2 Definitions and concepts

Riker (1962:12) defines a coalition in this way:

> «[R]egardless of the number of persons conventionally believed to be decisive, the process of reaching a decision in a group is a process of forming a subgroup which, by the rules accepted by all members, can decide for the whole. This subgroup is a coalition.»

Since this is a commonly accepted definition (within the framework of this thesis), I shall adopt it. I assume that persons belonging to the same party act identically, making parties the building blocks of the coalitions. A coalition can consist of one or more parties. The concept of a *municipal* coalition must be operationalised in such a way as to allow quantification. The analyses are all performed using three different operationalisations of the dependent variable. The three different operationalisations differ with regard to which parties are counted as members of the subgroup in the council. The differences hinge on the meaning of «forming» the subgroup. The first operationalisation implies that all the parties that supported the candidate elected as mayor by the representatives in the municipal council are counted as members of the coalition. I call this a *mayoral coalition*.

[4] In the English version of the Norwegian Local Government Act, this person is only referred to as «the chairman of the municipal council». In this thesis, I refer to this person as the «mayor».

The second and the third operationalisation implies that all parties controlling one of the important political positions in the municipality are counted as members of the coalition, forming what I have named *committee coalitions*. This is a purely analytical concept: no committee coalition has been formed formally by any subgroup in any municipal council. Nevertheless, I assume that committee coalitions emerge as a product of bargainings prior to the election of candidates to the different political positions. Thus, these groups may serve to indicate the co-operational climate in the municipal councils. I have divided the committee coalitions into two groups. The first consists of what I have called *total committee coalitions*, consisting of the parties controlling the mayor, the vice-mayor and the leaders of the standing committees under the municipal council. The second group is made up of what are called *reduced committee coalitions*. These are identical with the first type, with one exception: the party controlling the leader of the control committee is excluded.

In parliamentarically organised assemblies, the «opposition» can be defined as the parties not represented in the cabinet. In spite of debates concerning the oppositional status of parties supporting the cabinet without being represented in it, the concept is more clear-cut than when applied to Norwegian local politics. To define which parties belong to the opposition in a municipal council, that is organised to enhance consensual decisions, is somewhat contradictory. Nevertheless, I shall use the term «opposition» now and then, assuming that there exists differences as regards the different parties' influence on the outcome of local political processes. Some parties will always have more influence than others. The parties with little influence, then, belong to the «opposition». When studying the mayoral coalitions, the parties not supporting the candidate elected the mayor constitute the opposition. In the same way, parties which are not members of the committee coalitions when these are studied,

[5] Examples are that there are more conflicts in larger and more centrally located municipalities; that the distinctions between parties at the national level are more or less irrelevant when studying local politics; that most of the parties co-operate, implying that no «opposition» exists.

constitute the opposition. However, one exception is made, concerning the status of the party controlling the leader of the control committee only. Referring to that post's unclear importance, it is often assumed that it is given to a party representing the opposition. I assume that the party is not considered as having much influence on the outcomes of local political processes.

Bergman (1995:29) makes a distinction between formal and informal coalitions. The latter is a coalition that exists for one specific policy vote. Bergman's distinction depends on whether a coalition is formally constituted or not. The mayor is elected in accordance with a specific formation rule, which requires the mayoral candidate of a party or a coalition to win a formal vote of investiture in the municipal council in order to become mayor. The mayoral coalition is, however, consisting of the parties voting in favour of the candidate elected as the mayor. This group is not formally constituted in any way, making it an informal coalition. A specific formation rule does not exist for the formation of committee coalitions. A committee coalition consists of parties, each of which controls at least one important political position. The person in each of these positions is elected separately. Thus, a committee coalition is not formally constituted as a group, nor is it an informal coalition in the sense defined above. However, a committee coalition is assumed to consist of a *set* of informal coalitions, each stemming from the votes deciding who will occupy the different political posts. In other words, it is the result of a series of specific votes, which I assume are not independent of each other. It is assumed that each of these informal coalitions consists of the same parties, as a result of the bargainings prior to the elections.

Another distinction in regard to coalitions is rooted in an assumption stated by Rasch when he describes *weak* coalitions (1992:103): «It is not required that the concerted action is agreed upon or consciously arranged by the actors in advance». This may have implications for the size of the coalitions formed. The coalitions formed when electing the mayor are weak: without any kind of bargaining and co-ordination of

action prior to the election, a party can join the mayoral coalition by voting on the candidate being elected. The committee coalitions can be defined as strong coalitions, rather than weak ones: it seems probable that the outcomes of these votings are discussed and somehow arranged by the actors in advance. Further, a party can not become a member of a committee coalition if more than 50% of the representatives in the municipal council is against it. When constructing these coalitions, I implicitly assume that a form of concerted action exists which results in a set of leaders being elected with specific party affiliation.

The concept of «winning» has proved to be a problem for traditional coalition theories. Among the early coalition theorists, winning was the same as holding a majority of the seats (that is, more than 50%) in an assembly. However, this made it difficult to explain the relatively high frequency of minority governments appearing in Europe (see Strøm 1990). Thus, an alternative concept was introduced, stating that coalitions are viable, but not necessarily winning in the above-mentioned sense (Budge and Laver 1992). In this essay, I use winning in the «traditional» sense. A winning coalition, then, constitutes a subgroup with the potential to make decisions for the whole group (assembly).[6] Minority coalitions is not discussed in this thesis.

For a long time, the impact of *institutions* was one of the main topics in the works of the early political scientists. After being overshadowed through the 1960s and 1970s by a behavioural approach, institutions again have become one of the focal points of political science, often named as the *neo-institutional* approach (see e.g., Laver and Schofield 1990; Bergman 1995; Strøm 1997). This approach has been used within the traditions of both sociological and rational choice theories. Within the sociological tradition, institutions can be defined broadly as «[c]ollections of interrelated rules and

[6] All the municipal councils consist of an odd number of representatives, which excludes the possibility of one party or group of parties controlling exactly 50% of the representatives.

routines that define appropriate actions in terms of relations between roles and situations» (March and Olsen 1989:160, in Bergman 1995:30).

The rational choice tradition expresses a narrower view on the impact of institutions, e.g. defining institutions as «[s]imply rules about behavior, especially about making decisions» (Riker 1980:432, in Bergman 1995:30). Like Bergman, I shall conceive an institution as referring to a formal organisation, or a rule that governs some aspect of political life. A rule restricts the options available to the actors, and can be formal (written) or informal. «Informal rules are something more than just behavioral regularities. Informal rules - like formal rules - constrain the options available to the actors» (Bergman 1995:30).

«The institutional framework describes what options actors have, and what outcome they receive as a function of other actions» (Hagen 1995a:4). I shall not formalise the impact of institutional features on coalition formation in the municipalities. I assume, however, that institutions play an important role in influencing the outcome of the coalition-forming process. In contrast to comparative studies at the national level, my data provide the possibility of keeping this influence constant across a large number of cases.

Finally, some words about my use of the word «norm», which I use, for instance, in connection with what is assumed to be the accepted view among most municipal politicians, that one should strive to achieve decisions based on consensus. For the sake of simplicity, I shall in this thesis often refer to «the norm of consensus» when interpreting the observed results. It should be understood within a rational choice framework, implying that the influence of this norm depends on the utility the actors receive from adhering to it or deviating from it. Thus, it is to be understood as a kind of a weak unwritten rule. Its strength is indicated by the degree it seems to be adhered

to in the different municipalities, and this is indicated in the analyses presented in this thesis.

1.3 Plan of campaign

The thesis is divided into three parts. The first part consists of chapters 2 - 4. In chapter 2, I describe some relevant features of Norwegian local politics is described, including institutions, and present some views on the role of the mayor and the committees. Chapter 3 is labelled «Theory», mainly because it contains a description and discussion of some of the classical theories on coalitions, along with predictions of coalition formation. An inductively generated prediction is also included. In chapter 4, I discuss some methodological questions, and afterwards the operationalisations of the dependent variable, related to the features of Norwegian local politics described in chapter 2, and the assumptions defined in chapter 3. Finally, I describe the distribution of the data, also with respect to their reliability.

The second part consists of chapters 5 and 6. Chapter 5 contains analyses of the mayoral coalitions in relation to the classical theories' predictional ability. In chapter 6, the same analyses are performed using committee coalitions as dependent variable(s). The third part is devoted to quantitative, multivariate analyses of the probability that oversized coalitions will be formed. In chapter 7, the probability that oversized *mayoral* coalitions will be formed is predicted; in chapter 8, the probability that oversized *committee* coalitions will be formed is predicted. The thesis ends with a conclusion, where I attempt to sum up the findings and suggest some approaches for future research on municipal coalitions.

2 Norwegian local politics

In this chapter, I give an outline of Norwegian politics. Thereafter, I describe some institutional features associated with the election and function of the mayor. I go on by discussing the role and importance of the mayor. In that part, I draw heavily on Larsen (1993). I end the chapter by sketching the committee system and certain associated features.

2.1 Norwegian politics: national cleavages, local heterogeneity?

A cleavage defines the social base on which the parties build their support (Narud 1996:74). While at least six dimensions of cleavage have been identified in Norwegian national politics, a left-right dimension corresponding to the class cleavage has become the most significant (Strøm and Leipart 1992:72; Narud 1996:76). Thus, coalition building at the national level in Norway normally is affected by the saliency of the left-right dimension (Narud 1996:47). There are indications, however, that other cleavages have been reactivated recently, owing to the controversial issue of membership of the European Union, «[which] cut across established party lines and totally changed the prevailing consensus of the system» (Narud 1996:46; see also Saglie 1996).

The political competition in Scandinavia has usually been considered to be regulated by and to function within the framework of political parties (Larsen 1993:43). With the increasing predominance of party lists, local elections have become quasi-referenda on the present national government, thus assigning more attention to national political issues than to specific local concerns (Svåsand 1994:329). The view of local politics as being a pure mirror of national politics has been debated, however, and has been modified somewhat in recent years (Gitlesen and Rommetvedt 1994). Some authors, such as Bukve (1996:153-155), argue that the municipalities in general are

characterised by a low degree of politicisation, and describe the party system as truly multidimensional. The income side of the budget - the municipal tax rate and central grants - is fixed by the state (Rattsø 1989, in Hagen 1995a:29). Further,

> «...the communes have wide responsibilities in implementing national policies. This means that a large part of the local government's activities consists of implementation of policies launched by the national government. [...] The political contest in the communes is confined to allocating a more or less given amount of money. Since disagreement about the level of public spending is one important dividing line between the political parties, this means that party politics at the local level are politics under *restrictive conditions.*» (Bukve 1996:155, my emphasis)

Larsen and Offerdal (1994:64-65) point out that the pattern of participation is changing from a traditional party-based type to several forms of situational and individual participation, often more fragmented.[7] This may be manifested in the local political culture, leading to a blurring of the ideological differences between parties as a result of shifting alliances over different (local) issues.[8]

However, arguments can be put forward for viewing parts of local politics from a left-right related point of view. On the national level, parties situated to the left have a more positive attitude to a large public sector than parties to the right. This is not a matter of dispute at the municipal level, because the municipal income, and therefore the size of the public sector, is nationally controlled. Nevertheless, some differences do exist on socio-economically *related* issues. Sørensen and Hagen (1997, preliminary version) find distinct differences between representatives of the different parties concerning the *preferred* level of taxation, especially in larger municipalities. This is manifested in a higher level of taxation on property and larger fees for technical services in municipalities where the socialistic (leftist) parties control a majority of the

[7] In Denmark, these forms of participation have been labelled the «user's channel», stressing the citizens' role as users of public services (Larsen and Offerdal 1994:64).
[8] I shall use the term «ideological» as denoting the parties' national distinctiveness, characterised by their positions on the socio-economic conflict dimension.

representatives in the municipal council compared with *bourgeoisely* (rightist-) controlled municipalities. Thus, charges are used to some degree as a means of taxation. They also find some indications pointing in the same direction with regard to the degree of privatisation of some areas of service production for which the municipality is responsible.

During the 1980s, the national government delegated more responsibility to the municipal councils through an extended use of block grant financing. This means that decisions concerning priority between issues and allocation of resources are thereby left to a larger degree to the local politicians. In most studies, however, the effects found show only small differences between representatives from different parties concerning preferred budget priorities (Sørensen 1995b; Sørensen and Hagen 1997, prel. version).

A discussion about dimensional saliency can also be related to the size of a municipality. There is a tendency for an inverted proportional relationship to emerge between the size of the municipality and the number of changes and cumulations made to the ballot by the voters (Larsen 1993:43): the voters act more independently of the parties' suggestions in smaller municipalities, than in larger ones. In the latter a growing tendency has been observed for alliances between representatives of the political parties to follow the national dimensions of conflict, making parties as such more relevant (Hjellum 1967, in Larsen 1993:43). Further, as mentioned above, Sørensen and Hagen find some indications of more distinct national-like preferences regarding taxation in the larger municipalities (see also Hagen 1995a:91).

To sum up, there are arguments for and against the relevance of a national socio-economic conflict dimension in local politics. Certainly, this dimension *is* less relevant

in local politics. On the other hand, it is probably the nearest we can get to a single national conflict dimension of some relevance in most municipal councils.[9]

2.2 Institutional features of Norwegian local politics

2.2.1 National coalitions

In the context of this thesis, two features of Norwegian national political coalitions are worth noting (Strøm and Leipart 1992). Both can influence the size of the set of coalitions that can potentially be formed, and can be considered to be institutional constraints of a very informal type. The first concerns the role of the Labour Party (Ap), which has been the largest party in the Storting ever since 1945.[10] Ap has never been willing to join into a formal coalition with any other party in the Storting. The other feature concerns the traditional division of Norwegian politics into a socialist block (consisting of the Socialist Left (SV) and Ap) and a non-socialist block (traditionally consisting of the Liberals (V), the agrarian Centre Party (Sp), the Christian People's Party (KrF) and the Conservatives (H)). Formal coalitions in the Storting have emerged only within the *bourgeois* block, not between the blocks or within the socialist camp.

On the national level this has served as informal constrictions limiting the set of feasible formal coalitions that can be formed.[11] Block-thinking is an integrated part of the national political scene. I do not expect ever to find coalitions including Ap or inter-block coalitions in the municipal councils. However, these rather weak informal institutional constraints may tend to restrict coalition formation, and thus decrease the actual set of feasible coalition alternatives in some municipalities.

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[9] Perhaps with the exception of the conflicts following the debate on membership in the EU.
[10] See Appendix 1 for a list of Norwegian political parties, with abbreviations.
[11] This has not prevented *informal* coalitions from emerging from time to time in the Storting. E.g., on issues connected with the EU, SV, Sp, and KrF often formed voting coalitions in opposition to Ap and H.

2.2.2 The Lack of parliamentarism: the Board of Aldermen model

In a parliamentary democracy the government (the executive branch) has to be accepted by the parliament (the legislative branch). «If an absolute majority actively opposes a government (i.e. is willing to vote to remove it from power), the government has to resign (Bergman 1995:40). In positive parliamentarism there are two options: a vote of investiture and a vote of no confidence. In the traditional form of negative parliamentarism there is only the latter. In countries practising positive parliamentarism, most governments are close to or above absolute majority size (Bergman 1995:43-52). In the municipalities only the formal vote of investiture exists, but for the mayor only, not for the executive board. In other words, they are not organised by a parliamentarian system.[12]

Instead, the municipalities are organised by «The Board of Aldermen» model, based on a consensus principle. «The consensus principle implies that all parties above a minimum size have a right to a place in the executive board in the organization.» (Hagen 1995a:91) The municipal executive board thus consists of most parties represented in the municipal council.[13] This model can be classified as a democratic consensus model (cf. Lijphart 1984). The ideal is to reach unanimous solutions by discussion, not to make disuniting decisions based on partitioning votes. For a summary of differences between the «Board of Aldermen» model and a parliamentarian model, see Lotsberg (1989).

[12] One exception is the municipality of Oslo, which is entirely excluded from the data material and the discussions in this thesis. With regard to matters of Norwegian local politics, Oslo is a deviating case in most aspects.

[13] The Swiss government can be looked upon as equival to the municipal executive boards (for descriptions of the political organisation in Switzerland, see e.g. Lijphart 1984; Kerr 1987; Gallagher et al. 1992). «In short, Swiss political practice transforms opposition into coalition, conflict into consensus and diversity into unity.» (Kerr 1987:107)

2.2.3 The Local Government Act

The «new» Norwegian Local Government Act, which was passed in the Norwegian Parliament (*Stortinget*) in 1992, imposes several institutional constraints which affect the election and functioning of the mayor, and the functioning of the committees under the municipal council.[14]

The mayor is elected from among the members of the executive board by the members of the municipal council through a mixed majority-plurality mechanism. For a candidate to be elected in the first round, he/she must receive an absolute majority of the votes. If no candidate receives over 50% of the representatives' votes, a second round of voting is required. All candidates from the first round must participate in the second, but here a plurality is sufficient (i.e., the candidate who receives the largest share of the votes - the relative majority - wins, no matter how small this share is). The mayor is elected for a fixed period of four years. The leader and the vice-leader of each standing committee is elected by the same rule, in separate elections. In contrast, the membership of each of these committees is distributed proportionally, according to each party's share of representatives on the municipal council.[15]

Through the new Local Government Act the mayor's formal influence has become slightly diminished, but most of the powers connected with the position have been maintained. The mayor chairs both the municipal council and the executive board. Under the new Act, the mayor is elected for four years after the municipal elections, instead of every two years, as before. This, indeed, can lead to more severe coalition bargaining, because the normal practice in the municipalities has been for the mayor and the vice-mayor to change positions after two years. This will probably not be a

[14] When presenting the relevant features of the Local Government Act I draw on Overå and Bernt (1994), if nothing else is stated.
[15] The members are elected by means of a plurality vote, unless at least one representative demands that a proportional vote shall be used. That happens very often.

major problem, however (NOU 1990:13, p.131, in Overå and Bernt 1994:66). Furthermore, the Act retains the position of the executive board in the municipality, thereby contributing to the strength of the mayor.

In contrast to the earlier legislations, the new Local Government Act authorises each municipality to have a control committee, to supervise the municipal activities. Earlier, the executive board had the formal responsibility for this type of control (Gravdahl and Hagen 1997:49). The mayor, the vice-mayor, members and co-opted members of the executive board, and members and co-opted members of the standing committees with decisional powers, are not allowed to be elected to the control committee. Non-politicians can be members of the control committee.

2.2.4 The mayor

How important is the mayor? Formally, he/she enjoys rather restricted powers. Kleven (in prep.) states that the ability of the local politicians to govern is generally low, owing to the steadily increasing influence of the local bureaucracy. Nevertheless, the parties attach considerable importance to the task of holding the mayoral chair. This may be due to several features of the mayoral position.

«In a consensus model with strong sectors, it is too easy for changing majorities to pass cost-increasing decisions, without having to take the responsibility for balancing the books.» (Bukve 1996:158). Someone has to take that responsibility, however, because otherwise, according to the Local Government Act, the budget can be made invalid. Having to ensure that stable coalitions are formed through all the budgetary process can strengthen the position of the mayor. The possibility of achieving this goal is greater within the mayoral coalition.

The mayor represents the community. This aspect is universalistic. The mayor is regarded as representing the whole community, thereby creating and defining a

common will of the community. The mayor can also function as a link with the county level, the national level, and the «Norwegian Association of Local Authorities» (*Kommunenes Sentralforbund,* KS). The mayor is important as an intermediary between the municipal council and the administration (Overå and Bernt 1994:64). The last fifty years have witnessed a steady increase in the level of professionalisation connected to municipal leader-positions in general, and to the mayoral position in particular. A steadily larger number of politicians are formally employed part-time or even full-time with pay (Gravdahl and Hagen 1997), implying greater possibilities of obtaining information (and thereby influence) compared with other politicians. Combined with the agenda-setting powers, this helps to strengthen the importance assigned to the mayoral position.

Norwegian mayors believe that they have a general influence on the municipal policy (Larsen 1993:49-53).[16] This is partly because of the importance the mayors attach to their potential to exert influence through this body, and because the coalition behind the mayor often constitutes a majority in the executive board. This is compatible with the findings of Hagen (1995a), based on the «...assumption that the mayor has preferences which agree with the ideal point of the majority. [...] After all, this is why he is elected.» (Hagen 1995a:127-128). Thus, the viewpoints of the mayor often co-vary with the will of the majority, which contributes to the perceived feeling of influence.

According to Baldersheim (1993:14), the role of the mayor in the «Board of Aldermen» model bears many similarities to the role of the president of *Stortinget.* Larsen (1993) states that the mayor wants to appear as a combination of local prime

[16] A problem with Larsen's work (which he indeed himself points out (1993:54)) is that the term «influence» is not measured in any way. He argues, however, that the mayors themselves believe that they exercise influence. This may in itself affect local policy-processes, since all the politicians act in the light of this presupposed influence (Larsen 1993:54).

minister and local president.[17] The mayors seem to be very preoccupied with de-emphasising the party-political aspects of their position. Despite the clear tendency towards more party-based policies over the last fifty years, the mayors seem surprisingly consistent in stressing a consensus-minded orientation, e.g. by striving to achieve unanimous decisions in the municipal councils.

This can be explained by several factors. Fevolden and Sørensen (1987) stress the impact of local identity. Historically, Norway is made up of many municipalities, which are often sparsely populated and separated by mountains and poor communications. «This has produced strong local commitments and feelings of belonging to a particular community» (Fevolden and Sørensen 1987:44). Equal consideration must be given to the collegial forms of organisations and decisions which distinguish Norwegian municipalities (Larsen 1993). The most distinctive collegial form is the executive board, to which the members are elected proportionally from among the members of the municipal council. In this way two principles of democracy can be taken care of, namely providing (more) legitimate decisions, and furthering knowledge and understanding of political democratic institutions.

To sum up, the position of the mayor is considered to be the most important one in the municipality. First and foremost, this seems to be a consequence of the high symbolic significance of the position. It may also be a consequence of the informational and agenda-setting roles connected with the position.

2.2.5 The committees

The organisation of the political life in Norwegian municipalities differs from one to another on a lot of variables (see Johnsen 1996; Gravdahl and Hagen 1997). However, most of the municipalities have standing committees, each responsible for specific

[17] The presidential - or apolitical - role of the mayor can be illustrated by the fact that political groups receive financial support from local authorities, while only the mayor is provided with an office (Norton 1994:87).

policy areas. An example of a common form of organisation is the «main committee model» («*Hovedutvalgsmodellen*»), where the committees are organised by purpose (for instance committees for education, technical services, health and social matters, and culture). Another principle is to organise by function (for instance committees for management and for development). The organisational models also differ with regard to whether or not the committees have the right to make decisions as regards the municipal administration, and whether or not they have the right to make proposals to the executive board and/or the municipal council, respectively. Regardless of these differences, however, it seems reasonable to assume that the chairs of these committees are important positions of influence for the parties, from the aspects of specialisation, information and agenda-setting power.

The representatives' membership of these committees is decided by elections in the municipal council. Separate elections are held in the mayoral coalitions for the chairman and vice-chairman of every committee. Thus, it is possible for a party or group of parties representing a majority of the representatives to achieve control of all the chairs of the standing committees. The same goes for the vice-chairs too.

The assumed importance of the committees is open to some debate. Traditionally, the executive board - chaired by the mayor, and party-proportionally composed - has been the most important committee under the municipal council. Since the election of 1995, there are indications in many municipalities that the executive board is becoming an even more strategically important body in the municipality (Gravdahl and Hagen 1997). This applies especially to matters connected with budgeting and planning. On the other hand, the other committees can become more important as agenda setters in their own specific sectors, thus securing greater opportunities to influence decisions in the municipal council. And not to forget, despite these *tendencies*, the «main committee model» is still the dominant principle of municipal organisation.

The importance of the control committee is somewhat dubious, compared with the other standing committees of the municipal council. First, it does not include the mayor, the vice-mayor or members of the executive board or the standing committees with decisional powers, who are often regarded as some of the most influential local politicians. Second, its responsibility of control removes it somewhat from the daily political matters of the municipal council, which also implies a more distant status in relation to the existing conflictual patterns. Third, the fact that non-politicians can also become members may tend to decrease its importance.

3 Theory

The studies of coalitions have been dominated by two traditions (Laver and Schofield 1990:7-11). On the one hand, there is the deductive formal approach built on game-theoretical assumptions and arguments. On the other hand, there is an inductive, empirically based approach, which tries to fit actual experiences of coalition formation to the theory, often modifying the theory to make it coincide more with reality.

The differing assumptions about motives are crucial for understanding the difference between the various coalition theories. All coalition theories contain some fundamental assumptions about the motivations of the relevant political actors involved in coalition-related behaviour (Laver and Schofield 1990; Laver and Budge 1992). These different motivational assumptions affect the predictions and explanations these theories produce concerning coalition formation (Laver and Schofield 1990; Schlesinger 1991).

Initially, the basic motivation was assumed to be purely related to office and position. More recently, theories have been developed which emphasise policy-maximising as a fundamental motivating force. A third motivating force is assumed to be vote-maximising, i.e. theories that regard the actors as acting with the coming election(s) in mind. More recently, approaches have appeared which try to take into account more than one motivating force (Narud 1996:16). Strøm (e.g., 1994) models bargaining between parties that have multiple goals. Here, the motives of office, policy and votes (in later elections) are seen as independent and mutually conflicting.

The motives can also be differentiated into intrinsic and instrumental goals (Laver and Schofield 1990; Bergman 1995). Office may be an end in itself, or a means of promoting a certain policy. This analytical distinction is easily blurred, however, in

practice (Laver and Schofield 1990:58). Likewise, policy may be valued for its own sake, or as a means of getting into office. Based on the assumptions of actors' motivations, I shall do what Laver and Schofield (1990) have done, and divide deductively based theories which deal with coalition formation into two broad types: office-seeking and policy-seeking theories. I choose not to include theories based on vote-maximising.

I shall now present some general assumptions underlying all the coalition theories presented here, and afterwards present two theories of a deductive type and one inductively based model of coalition formation.

3.1 General assumptions

I shall base all the predictions made on three assumptions. As mentioned above, I assume that actors, i.e. parties, are unitary. This is not an inevitable assumption, neither in general nor in respect of local parties. At the national level, Norwegian political parties can be labelled as uncommonly cohesive by European standards (Strøm 1990:189; Strøm and Leipart 1992:63). The party discipline is strong. On the other hand, Svåsand argues that, on the whole, the parties have become more internally fragmented, rather than more dominated by either national or local branches (Svåsand 1994:320). It could be that local parties sometimes face a dilemma between national party policy goals and specific local policy issues. I still assume unitary parties, however, operationalised as unitary voting when electing the mayor and the persons to fill the other important political positions.

The second assumption is that actors are conceived as being rational. A rational choice approach assumes that individuals compare the expected benefits and costs of an action prior to adopting strategies for action. Human actions are goal-oriented and individual, and institutional actors try to maximise their goal achievement. This assumption is often attacked for its lack of realism. The arguments often used are gathered from

«prospect theory», which shows that the way a choice is framed may affect the outcome of the decision; and from theories based on «bounded rationality», which assumes that choices are based on «thumb-rules» leading to satisfactory utility, instead of on utility maximisation (this is summarised in Hagen 1995a:3-10). Drawing on Tsebelis (1990), Hagen (1995a:9) argues that

> «[t]he crucial point here is that people (on the average) will approximate rational choice prescriptions when issues are important and information is good. Furthermore, there are learning, evolutionary and statistical reasons why the axiom of rational or optimizing behavior is appropriate (Tsebelis 1990:38). If we adopt this view, there are reasons to believe that rational choice models will be fruitful in so-called «well-structured» situations where the actors have known goals and the interaction processes are well understood.»

I assume that the political processes studied here are subsets of human behaviour and interaction can be described as such «well-structured» situations. Elections within a municipal council should contain both the information and the familiarity with rules needed to make choices that lead to the expected utility maximisation.

The third assumption concerns the actors' information. Like Riker, I assume that the actors have complete and perfect information. Complete information means that each actor knows the weight of every actor, and precisely how much the addition of any actor to a coalition will alter its value (Riker 1962:78). The assumption of complete information seems to be an uncontroversial one, which operationalises weight as the number of seats every party holds after the municipal election, before the election of the mayor. Perfect information means that each actor knows what move(s) every other actor has made (Riker 1962:78). This is a somewhat more controversial assumption, but can be interpreted as knowing every other actor's choice of strategy concerning whether to join a coalition or not (see Rasch 1993).

3.2 Policy blind theories: minimal winning and minimum size coalitions

William H. Riker (1962) explains coalition formation in terms of a rational choice of goal-seeking actors (Bergman 1995:3). Riker assumes that actors are office-seeking.[18] This view of politics is based on the assumption that the actors' goals are to maximise «[s]uch values as the income, power, prestige and related benefits which come from political office» (Denters 1985:296). Given this assumption, and assuming also that the gains are fixed, Riker (1962:32-33) derives the size principle:

> «In n-person, zero-sum games, where side-payments are permitted, where players are rational, and where they have perfect information, only minimum winning coalitions occur. [...] In social situations similar to n-person, zero-sum games with side-payments, participants create coalitions just as large as they believe will ensure winning and no larger.»

Based on this principle, he predicts that *minimal winning coalitions* (MWCs) will be formed.[19] These are coalitions consisting of two or more parties which, given the operative decision rule, are winning in the sense that they together control a majority of the seats in the assembly, and minimal in the sense that they lose this majority if one of the parties withdraws its support. (Lijphart 1984:47; Rasch 1993:58; Laver and Shepsle 1996:260). Such a coalition was formed in the municipal council of Vestvågøy, counting 35 representatives altogether. When electing the mayor in 1995, the representatives from Ap (5), Sp (11) and Frp (5) made up the winning mayoral coalition. This coalition would lose its majority if any one of these parties withdrew its support.

Minimal winning coalition theory always predicts more than one outcome when there is no single majority party (Lijphart 1984:49). To reduce the number of predictions, Riker suggested a more precise approach: «[c]oalitions that form will be a subset of the set of *minimal* winning coalitions comprising those with the smallest total weight»

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[18] Instead of «office-seeking», «position-seeking» is also used to describe the actor's goal. I use these terms interchangeably.

[19] Originally proposed by Von Neumann and Morgenstern (1953, in Laver and Schofield 1990:92). However, Riker is the one being connected to this prediction later.

(Laver and Schofield 1990:94). These coalitions are *minimum size coalitions* (MSCs). If weight is interpreted as the number of seats in the assembly controlled by each party, an MSC was formed in Notodden by 21 out of a total of 41 representatives supporting the mayor. No smaller winning coalitional alternatives existed.

Riker ignores the actors' policy preferences (Laver and Schofield 1990:91). Actors are only motivated by obtaining office. By defining office as a fixed, limited prize to be shared, Riker explains why coalitions will not include all parties: the share for each partner in a winning coalition will increase with a decreasing number of partners.

When deriving the size principle, Riker assumes that (Rasch 1993:60-62; Hovi and Rasch 1996:44):

- actors are rational and unitary, and possess complete and perfect information.
- membership is autonomously controlled by the members of the coalition.
- bargainings are co-operative zero-sum games[20] where compensations (side-payments) are permitted.[21]
- membership is a necessary and sufficient condition for obtaining a positive pay-off.

Below, in chapter 4, I shall discuss whether these assumptions are met or not, when operationalising mayoral and committee coalitions.

Two general predictions can be made concerning the size of coalitions formed - given the assumptions made above - based on the size principle. The first states that *minimal winning coalitions will be formed.* The second prediction leads a step further,

[20] «**Co-operative game**: A game in which players can make binding agreements before and during the play of the game and communication between the players is allowed.» (Morrow 1994:349)

[21] Koehler (1974:29-30) argues «...that even without the zero-sum condition, it follows from the scarcity of legislative resources that rational legislators will cease coalition building once they have enough members to assure success.»

predicting that *minimum size coalitions will be formed.* These predictions will be tested in chapters 5 and 6.

3.3 Modified office-seeking theories: minimal connected winning coalitions

A bundle of new theories appeared in the wake of Riker's coalition theories. These emphasised the wish to maximise a certain kind of policy as the basic motive for politicians, not the office *per se* (Laver and Schofield 1990:45; Strøm 1994:116). Theories emerged «[t]hat do take account of policy in order to reduce the range of bargaining possibilities that are evaluated, but which maintain as a fundamental assumption the notion that politicians are motivated above all else by a desire to get into office» (Laver and Schofield 1990:91). Several authors have pointed out that the so-called «policy-based» theory of Axelrod (1970) actually is a modified version of size-oriented theories of coalition formation (Lijphart 1984; Laver and Schofield 1990; Budge and Laver 1992; Bergman 1995). In a hierarchical representation of the actors' motivations, the desire for office would rank above the desire to maximise a certain policy position (Laver and Schofield 1990:102-103). Policy positions are considered when the actors have to choose between coalitional alternatives that are identical in terms of office-seeking assumptions. The policy position of any actor can be defined in terms of a set of co-ordinates in a policy space (Budge and Laver 1992:3). This policy space is made up of a number of dimensions of conflicts being salient for a given party system.

Axelrod took as a point of departure the actors' desire to minimise the potential for conflict within the coalition (Laver and Schofield 1990:101; Rommetvedt 1991:55-56). This can be done by making the coalition ideologically compact, i.e. the partners should be connected on a political dimension. Axelrod predicts that *minimal connected winning* (MCW) coalitions will be formed. MCW coalitions are distinguished by connectedness and minimality. Connectedness is a necessary condition for a coalition

to form. Assuming that both party and coalition policy can be described in terms of one «policy dimension», the parties forming a coalition will be adjacent on such a dimension (Laver and Budge 1992). Political parties are ordered along a single policy continuum, i.e. at ordinal level (Browne et al. 1984:1). Holding a majority of the seats is another necessary condition. Neither of these conditions is sufficient, however; the coalition also has to be minimal in some sense. The coalition's two wing parties must control a number of seats, which makes each of these parties necessary for controlling a majority of the seats for the coalition as a whole.[22] It is this kind of coalition that is referred to by Laver and Schofield (1990:97): «coalitions will be «minimal connected winning» in the sense that the loss of a member renders the coalition *either* no longer winning *or* no longer connected.» (Laver and Schofield 1990:97, my emphasis), and by Lijphart (1984:50). An example of a mayoral MCW-coalition is found in the municipal council of Stord. Among the 45 representatives of the municipal council, the 26 representing Ap (13), V (3), Sp (3) and KrF (7) supported the mayor. The coalition is oversized. While Ap and KrF, assuming they are the left and right wing parties of the coalition respectively, are both necessary for holding a majority, Sp or V could have withdrawn without changing the coalition's winning status. However, according to Axelrod, both are included to minimise internal conflict.

Axelrod's actors are office-seekers and policy-seekers. When bargaining, although striving to minimise the size of the coalition, they also consider policy positions along one policy dimension. The single most important dimension at the national level is the socio-economic (left-right) dimension. In a municipal context, this implies that such a dimension is salient in all municipalities. This is not an unreasonable assumption. Leaving aside, in this essay, that the degree of saliency may vary with e.g. size of municipality, this dimension attracts some attention everywhere. Indications of an

[22] «[T]he coalition may contain unnecessary members, but without those members the coalition would be open, *i.e.* the policy positions of such unnecessary actors must lie in between those of two actors that are members of the coalition. The extreme actors in the coalition must, therefore, always be necessary.» (de Swaan 1973:75)

increasing nationalisation of the municipal election, and of parties becoming more important in local politics may help to make this assumption realistic.

The parties' positions when ordered along the left-right dimension can be disputed, also at a national level. The validity of the parties' assigned dimensional positions when a national ranking is transferred to the very varying sphere of local politics is even more open to question. Nevertheless, I shall undertake such an ordering, assuming equality across municipalities. The low predictional ability of Axelrod's theory can then itself be explained by, among other factors, a lack of identical unidimensional orderings in the different municipalities. I shall return to this topic later, when I discuss the results below.

Again, given the assumptions discussed in this section, a prediction can be made concerning the size of a coalition formed. Axelrod's theory leads to the general prediction that *minimal connected winning coalitions will be formed.* This prediction will be tested in chapters 5 and 6, along with the predictions of Riker.

3.4 An inductive model: oversized coalitions

When deriving inductive models the goal is as much to explain as to predict (Narud 1996). Laver (1986:42) points to the danger of being too inductively oriented: «Every practical modification made to the theories in the name of realism distances them a little more from that paradigm, with the attendant danger that they become mere rationalisations of choice rather than rational choice theories». The model put forward in this section seeks to explain one feature of coalition formation often left unexplained, namely the formation of oversized coalitions. It is based more on empirical observations than on deductive reasoning. Even so, some deductively generated models are drawn upon in the following.

Luebbert (1986, in Laver and Schofield 1990:84-87) argues that oversized coalitions are most probably formed in dominated democracies. «A dominated system is one in which party leaders assume that no majority government that excludes a particular party is possible in the foreseeable future.» (Luebbert 1984:247) The dominant party will try to enlarge the size of the coalition by bargaining simultaneously with more than one of the parties with sufficient representatives to secure a majority, to reduce the possibility of being «black-mailed». Luebbert assumes that the only way for a party to influence on policy in a dominated system is to be a part of coalition cabinet (Laver and Schofield 1990:87). This contrasts with theories of minority governments based on viability. Laver and Schofield conclude that it makes little or no difference whether small parties are in or out of office; they are nevertheless equally weak.

As described above, a common view of municipal politics is based on an assumption of consensus. National politics are de-emphasised, as is the exclusive predominance of the left-right dimension. Local political issues divide the municipal politics across national conflict dimensions. Sørensen (1995a:73-74) argues that the alternative policies proposed in a municipal context are often unclear, and not divisive along national conflict dimensions. This is because the profiles of the local parties differ from those of their respective national parties. When decisions are based to a lesser extent on ideological arguments, the politicians may want to increase the legitimacy of these decisions by maximising support from all the parties. A theoretical account corresponding to this one is presented by Groseclose and Snyder (1996), who model the coalition formation process sequentially, argue that «supermajorities» are likely to form. Minimal coalitions should be formed only rarely, because of the apparent danger of their being attacked by the minority, which may reach rapprochement with one of the parties in the coalition. If the coalition is oversized, such rapprochements are more expensive to carry through.

An alternative view pointing in the same direction is inspired by Tsebelis' «Nested Games» (1990). Local politics can be looked upon as a constant struggle to build issue-based coalitions, in a political milieu where the conflict dimensions on the different issues vary. Although electing the mayor is but the first of these coalitions, it is nevertheless of major importance, not least symbolically. It indicates a possible pattern of co-operation in the four-year term to come. In the same way, scattering the important political positions between more parties than strictly necessary to control a majority could help to improve the conditions for co-operation. Hence, for a potential core coalition, maximising the size of the coalition - being it a mayoral or a committee coalition - could be a means of strengthening the basis for building informal voting-coalitions. Combined with a consensus-orientation in general, this might be plausible when the actors are conceived as being rational in the long term.

To sum up the above arguments is not an easy task: they are based on somewhat different assumptions and should be interpreted in more detail than is done here. For instance, not all municipalities are dominated systems, and it is necessary to discuss the content of a suitable definition of what makes a party dominant. Nor am I able to model the process of coalition forming, and certainly not to model it as consisting of sequential steps. That would have been interesting, but demands analyses at deeper levels in each municipality. What these theories do indicate, however, is that a model predicting the formation of oversized municipal coalitions can be inductively developed, and «tested».

Thus, conceiving local politics as consensus-oriented decisional activity, supported by a view of informal coalitions based on the notion of long-term rationality, leads me to predict that, as a general rule, oversized coalitions will be formed. Based on a common view of Norwegian local politics, the prediction could be stated as a null hypothesis, with minimal, minimal winning and minority coalitions representing deviations from that norm. I prefer not to formulate this prediction as a formal hypothesis, because of

the inductive way it has been generated. Nevertheless, it will be treated equally to the deductively generated hypotheses when I discuss the results found in the empirical data.

4 Methodology and empirical data

In this chapter, I discuss some general aspects related to the generation and testing of hypothesis and theories as carried out in this thesis. I also describe how the empirical data were obtained, the validity of the operationalisations, and the reliability of the observations.

4.1 Theory-generating vs. theory-testing

The process of research can be considered as consisting of two main steps. A distinction can be drawn between research aimed at generating new theory, and research aimed at testing the theory. This distinction is based on Karl Popper's distinction between «the context of discovery» and «the context of justification» (Hovi and Rasch 1996:20-22). The first step is based on creativity and intuition, raising new ideas, and formulating these as theories or hypotheses. The second step demands thorough critique and analysis of the ideas.

A hypothesis is often generated inductively (Hovi and Rasch 1996:21). Normally, it can then be based on thorough knowledge of a certain issue; on observations stemming from individual cases; on patterns in a data material, and so on. Obviously, the way a hypothesis is generated is of no significance for whether it can be given a scientific basis («justification») or not.

In this thesis, I shall test deductive hypotheses based on earlier theorising, and inductive hypotheses based on respectively observations in the data material and on knowledge of a certain issue. The testing of the relevance of Riker's and Axelrod's theories is definitely based on earlier theorising. In contrast, the hypothesis concerning the formation of oversized coalitions is based on the «knowledge» that oversized

coalitions often appear in local politics (based on a consensus principle), and of course on patterns in the data material. Further, I use multivariate analysis to find out what factors influence the formation of coalitions. The models have been developed on the basis of somewhat vague assumptions concerning the strength, and even the direction, of influence of the different assumed independent variables. Thus, they have an exploratory function.

4.2 Explanation vs. prediction

Normally, empirical research is said to have three components: description, explanation and prediction (Hovi and Rasch 1996:123). Sometimes there seems to be a mix-up between the terms «prediction» and «explanation». A prediction can be defined as a grounded statement which forecasts an observation that is not already known to the person making the prediction (Hovi and Rasch 1996:123). The assumption that the statement should be grounded is important, because it distinguishes prediction from guesswork. That the statement is grounded means that it is based on a set of premises which are intended to make fulfilment of the statement probable.[23] An explanation is an answer to the question «Why did X happen» (Hovi and Rasch 1996:35). It also requires that the answer seems to be reliable in some way.

According to Hempel's thesis of symmetry (see Hovi and Rasch 1996:141), predictions and explanations have equally logical structures. The distinction between them is purely pragmatic: when predicting, we try to foresee a consequence of some initially known conditions. When explaining, we try to determine what conditions caused a certain event to happen. Thus, both imply an attempt to clarify and understand causal relationships. In this thesis, the goal is to improve our understanding of coalition

[23] A distinction can be made between predictions and statements which consider past events (retrodiction) (Hovi and Rasch 1996:124). The point of importance is that the outcome is not known to the person making the statement. Strictly speaking, then, the «predictions» I make on coalition formations are of a retrodictive type. Nevertheless, I shall use the term prediction throughout this thesis.

formation. The second part of the thesis is devoted to a description of coalition formation in Norwegian municipal councils. Coalition formation is described by grouping coalitions into theory-based types of coalition. Various theories predict the outcome of the coalition formation process, i.e. what types of coalitions will be formed. If the predictions generated from a theory are (more or less) correct, the theory is accepted. The predictions made in the first part of the thesis are *theoretically* generated, in opposition to *empirically* based predictions, which I shall generate in the third part, using multivariate analysis to predict outcomes of the coalition formation processes[24]. In chapters 7 and 8, I use logistic regression, which strictly speaking is a predictional device, to determine factors that could influence local coalition formation behaviour. If the predictions made are relatively successful, then, this can be taken as an indication that variations in certain independent variables help to explain variations in local coalition formation.

In association with the quantitative analyses, it is important to note that I do not assume any form of structural determinism. Rather, I look upon the (assumed) influence of these independent variables as restricting the conditions under which the actors act. This is rooted in the thoughts of the new institutionalism described in chapter 1, and is thus based on an *intentional* approach, not a structural one. An intentional approach focuses on the actors' values, beliefs and preferences as being conditioned by, but largely independent of, structures (Cohen 1994:3).[25] In other words, I do not set out to find that in centrally located large municipalities oversized coalitions will form. What I intend to find out, is if there is greater probability of oversized coalitions being formed, given certain conditions under which bargainings about coalitions take place. Therefore, the (assumed) change found is because these

[24] See Hovi and Rasch 1996 for types of predictions.
[25] For descriptions and a summary of differences between «structural» and «intentional», see chapters 1-4 in Cohen 1994.

conditions function as a framework that limits the number of feasible alternatives for the actors involved.[26]

It must be said, however, that the predictions made in the chapters 7 and 8 not are very accurate. It is by no means obvious how all the different independent variables influence coalition formation. My aim is to produce models which are able to predict, at least to some degree, the outcome of the coalition-forming process in municipal councils when electing the mayor. I am fully aware of the fact that statistical coherence does not necessarily imply causation. Thus, I do not here see any reason to draw a distinction between predicting and explaining. On the contrary, the models are intended to serve as a guide to identifying variables which might help to explain coalition formation. As used here, however, I see no principle difference between the use of predictions based on theory and on empirical data, respectively: both are used as tools to *strengthen* the theories that attempt to explain coalition behaviour.

4.3 Operationalisation of the dependent variable

Because it can function as an indication of motivations and patterns of co-operation, the size of coalitions is a central theme in political science. However, it can be problematic to operationalise the dependent variable, i.e. coalition type, especially as regards deciding which coalitions to study (formal vs. informal coalitions; weak or strong coalitions; issue-based coalitions and so on). In this thesis, my intention is to shed some light on motivations and conflictual patterns, as indicated by the coalitions formed. In this section, I shall define and discuss the validity of the different operationalisations of the dependent variable.

[26] For the sake of simplicity, and to avoid tiring the reader, this is not repeated in chapters 7 and 8, when I describe and interpret the models, but it should always be kept in mind.

By the term «validity», I refer to the degree of accordance between the theoretical definition of a coalition, as defined by Riker, and the operational definitions used (for a discussion on validity, see Hellevik 1993). The degree of validity should be also assessed in relation to the goal of improving our understanding of coalition behaviour in Norwegian municipal councils. For instance, the coalitions observed may not be identical with the «real» constellations that appear in the municipal council, «real» denoting a group of parties co-operating on a long-term basis, formally or informally, on specific types of issues or on a broader range, and so on.

4.3.1 Mayoral coalitions

I have defined mayoral coalitions as the group of parties that support the candidate elected by the representatives in the municipal council. How well does this operationalisation satisfy Rikers assumptions? His widely debated assumption of bargainings being zero-sum games where compensations (side-payments) are permissible can appear to be reasonable for mayoral coalitions, if we, in addition assume that membership of the coalition is a necessary condition for obtaining a positive pay-off. In a zero-sum game, the size of the prize to be shared among the contestants depends on the number of losers (i.e., the parties that are not members of the winning coalition). The prize - the mayor - can be won by one party only. So in order to understand that coalitions are formed at all, other important positions must be considered as side-payments that can be shared among the members of the winning coalition. Such side-payments could be the position of vice-mayor, leadership of the main committees, and membership of the executive board. I shall return to this issue later, when discussing committee coalitions. For the moment, I just assume that such side-payments exist.

However, membership of the mayoral coalition is not controlled autonomously by its members. Since it is an informal coalition, no party can be excluded from voting for the mayor. Hence, this assumption is not fulfilled. This could affect the predictional

ability of Riker's theories. A coalition can be established as a result of bargainings between parties. When it comes to the voting, however, other parties might vote for the same candidate too, for several reasons not related to membership of the coalition concerned. This should be kept in mind when reviewing the analyses which follow. I will return to this issue as well several times later.

An important assumption, not stated explicitly, is that there has to exist a fixed and unambiguous rule of decision for defining whether the status of a coalition is winning or not (Rasch 1993:61). Minority coalitions can only emerge after a second vote in the mayoral election. The possibility of voting tactically in the first round of voting could limit the predictional ability of Riker's theories. This possibility is somewhat diminished, however, by the rule that all candidates have to run in both rounds.

The view of politicians as pure office seekers is possibly supported by the constraints under which local politicians have to act. The struggle for position is more important than ideologically based policy outcomes, and the mayor is the most important position to be bargained about. The lack of parliamentarism enhances the importance of the different positions: when once elected, the mayor and the persons who fill the other positions that are «fought» for hold these positions for the next four years.

As for the Axelrodian assumption of the presence of a single-dominant conflict dimension, it seems somewhat uncertain whether one exists at all. However, if it does, it is probably a socio-economic, even if a weak one. As regards mayoral coalitions, arguments can be made both for and against the relevance of such a dimension. The election of the mayor can be regarded as an issue above the everyday local politics. In this case, the parties can be thought to divide into groups similar to the ones found at the national level. On the other hand, it can also imply a total decoupling from traditional party politics, leading to no single nation-wide conflict dimension.

Bukve (1996:154) argues that «[e]lections of mayors can be regarded as an indicator of coalition behaviour in the municipal councils.» He goes on to emphasise, however, that mayoral coalitions lack any kind of coalition platform or any obligation to establish some kind of formalised co-operation (Bukve 1996:154). This means that they are not *stable* voting coalitions. Even so, I think they have a potential to provide some information about coalitional behaviour in local politics. The mayor is an important person in municipal political life: he/she holds a strong symbolic position, and exercises some influence (Larsen 1993). Furthermore, the election of the mayor often indicates potential patterns of co-operation, which emerge as a result of a bargaining process between the parties, more or less influenced by a general norm of consensus-building.

To sum up: with the reservations made in this subsection, I find that mayoral coalitions meet Riker's assumptions satisfactorily. The status of Axelrod's assumed presence of a single conflict dimension is rather more doubtful. I have argued that the concept of mayoral coalitions can function as an indicator of the «real» coalition formation in the municipalities. However, the same goes for committee coalitions too.

4.3.2 Committee coalitions

Some aspects of the «portfolio approach» (Laver and Shepsle 1996) have inspired me to study the committee coalitions formed in the municipal councils. While resting on different assumptions than those put forward here, Michael Laver and Kenneth Shepsle's book (1996) on the importance of gaining control of specific ministerial portfolios is based on certain ideas of which some can be utilised at the municipal level too. They identify the perhaps most distinctive feature of their approach as «[t]he assumption that most important policy decisions are taken by the executive.» (Laver and Shepsle 1996:13). This is because of the agenda power delegated to the different portfolios through specialisation and division of labour. Thus, the process of policy formation on a certain issue is heavily influenced by the person in charge of the

relevant department. Their approach does not take into account whether politicians are pure policy-seekers or office-seekers «in disguise». They state that politicians, regardless of their actual motives, aim to implement the policies with which they are associated with (Laver and Shepsle 1996:21).[27]

As described above, the institutional structure of Norwegian municipalities differs fundamentally from the structure found at the national level, the most important difference being the lack of municipal parliamentarism. I still assume, however, that some positions related to the municipal council are more important than others. The mayoral position is the one of greatest importance. Of major importance are also the position of vice-mayor and the chairs of the different standing committees («*Hovedutvalg/faste utvalg/komitéer*») under the municipal council. A «chair» is defined as a leader of such a committee.

I assume then, that bargainings take place between the different parties when allocating the chairs of the committees. Hence the assumption that the party/group of parties controlling the important committee chairs makes up a coalition which indicates a pattern of co-operation in the municipality. Ideally, the vice-chair of a committee should also be considered as an important political position. I do not have available data on the party affiliation of vice-chairs. Therefore, I have excluded these when defining the positions it is necessary to control in order to be included in the committee coalitions. Obviously, this has implications for the distribution of the different types of committee coalitions observed. If the parties of the vice-chairs were included, the number of oversized coalitions would certainly have been more than the number of oversized committee coalitions observed here.

[27] Laver and Shepsle elaborate their model of coalition formation by utilising a policy-based median concept to explain why government formation need not necessarily be chaotic. With regard to the scope of this thesis, this is somewhat irrelevant. I have earlier presented arguments supporting a view of party-based conflict dimensions in Norwegian local politics as being rather irrelevant. This view tends to be strengthened when the Axelrod-based predictions are tested below.

I define the standing committees of each municipality as important, with one exception. The Local Government Act authorises each municipality to establish a control committee. Most - but not all - of the municipalities have done so. Nevertheless, the function of this committee are sometimes delegated to another committee. Further, the control committee seldom enjoys decisional or propositional powers. The importance of this committee is - at best - doubtful. However, if parties holding this chair only are excluded from the defined committee coalitions, this obviously reduces the average size of the coalitions formed. I have therefore chosen to analyse both sets of coalitions arising from the differing definitions, and hereafter refer to them as «total committee coalitions» and «reduced committee coalitions».

With this in mind, I define committee coalitions as the group of parties controlling the chairs of the important political committees in the municipality, each party holding one or more of the chairs. To exemplify, in the municipality of Herøy, Ap controls the mayor, the vice-mayor and all the chairs, including the chair of the control committee. The committee coalition consists of Ap only, and the total committee coalition and the reduced committee coalition are the same. A contrast to this example is the municipality of Gran, where Ap controls the mayor and the chair of the committee for culture, environment and trade, while Sp controls the vice-mayor and the chairs of the two other important committees. H controls the chair of the control committee. Hence, the total committee coalition in Gran consists of Ap, Sp and H, while the reduced committee coalition consists of Ap and Sp.

I did not have access to information on voting or party splits, which means that I count all coalitions established as consisting of unitary parties. I assume that when a party controls a position, this is with the consent of a united (and rational) party. Thus, I assume that this assumption of Riker’s is met. This goes for the assumption that all parties have perfect and complete information as well. I have no information

concerning how each party voted in each election. However, when a chair is controlled by a party, this cannot have been achieved against the will of a majority. Thus, the assumption of an exclusive membership in the coalition is met, unlike in the case of the mayoral coalitions.

As for the assumption of bargainings as co-operative zero-sum games where side-payments are permissible, the concept of committee coalitions has been constructed so that it resolves one of the weaknesses of mayoral coalitions: the potential side-payments of important political positions are now (partly) included. Whether this is done to a satisfactorily degree is obviously questionable. So is the assumption of membership being a necessary and sufficient condition for pay-off, because of the exclusion of any party that controls one or more of the vice-leaders of the committees without controlling any of the chairs. Apart from that, this assumption seems to be met.

Further, a comment should be made, concerning the implicit assumption that, when testing Riker's theories, there has to exist a fixed and unambiguous decision rule for defining whether a coalition is winning or not. «Committee coalitions» is an analytical term only. Thus, the rule of decision is constructed analytically too: a committee coalition is winning if it controls more than 50% of the representatives in the municipal council, enabling it to make decisions on behalf of the municipal council if any concerted action is agreed upon by the parties composing the committee coalition.

With regard to Axelrod's assumption, I refer to the discussion in section 2.1; to the degree that such a dimension exists, its influence on the formation of committee coalitions can be tested.

To sum up, I assume that these coalitions can function as an indication of the co-operational/conflictual climate in the municipal council, with regard to the size of the

group of parties actually co-operating. The validity of this concept in relation to Riker's and Axelrod's assumptions should be considered acceptable.

4.4 Empirical quantitative data

In this section, I shall describe the distribution of the dependent variable for each of the operationalisations defined above.

4.4.1 Mayoral coalitions

A questionnaire asking, among other things, which party/parties voted for the mayor after the municipal election in 1995 was sent to all the Norwegian municipalities (435).[28] 85.5% (372) municipalities responded. This should be considered enough to be representative of municipal activity in Norway. The data was combined with data on party size from the Norwegian Social Science Data Services (*Norsk Samfunnsvitenskapelig Datatjeneste, NSD*).[29] Statistics Norway (*Statistisk Sentralbyrå*) was responsible for the collecting and the punching of the questionnaires. The «raw» data material can be considered to be reliable (for further documentation, see Teigum 1996).

From the initial group of 372 municipalities, one had to be excluded because it practices a parliamentary system, 31 because of missing data on voting results, mainly due to secret voting, and eight because of inconsistency in the data. Party splits occurred in 10 municipal councils when the mayor was elected.[30] Table 4.1 shows the distribution of these elements of the data material.

[28] A copy of the questionnaire is printed in Teigum (1996).
[29] NSD is not responsible for the way the data has been handled and analysed.
[30] We also observe that it was necessary to have two rounds to get a mayor elected in only 11 municipal councils.

Table 4.A *Municipal councils by representation and splits.*

	Percentage	(N)
Parliamentary system	0.3	(1)
Missing data, mostly on the distribution of votes	8.3	(31)
Inconsistent data	2.2	(8)
Party splits	2.7	(10)
«Others» represented*	38.2	(142)
«Others» not represented	48.4	(180)
Sum	100.1	(372)

*Here, the term «Others» denotes parties and groups not represented in the Storting in 1993-97. These are the Pensioner's Party, the Greens, two right-wing extremist parties, the Communist Party, joint lists, local lists and other lists.

I myself coded and classified each municipality's type of coalition, into an SPSS-file. I classified each coalition manually according to the different criteria forming the basis for the different predictions. First, I classified the coalitions in five categories: minimal coalitions, oversized coalitions, coalitions consisting of one party controlling a majority of the representatives, coalitions consisting of two or more parties which together does not control the majority, and finally coalitions consisting of one party which does not control the majority. The coalitions were also classified in the following categories: minimal winning, minimum size, minimal connected winning, minority coalitions and oversized coalitions.[31] For the multivariate, quantitative analyses, the coalitions were classified in two categories: oversized and not oversized. I tested the reliability of my classification by reclassifying about 10% of the data. Only minor errors had occurred, indicating that the results obtained when analysing the data are based on reliable observations.

4.4.2 Committee coalitions

Data on mayor, vice-mayor and committee chairs are collected by KS, published in Kommunenes Sentralforbund: *Kommunenøkkelen 96-97*. I punched these data into an

[31] The (few) coalitions being both minimal connected winning and oversized are classified as minimal connected winning when testing the Axelrodian predictions.

SPSS-file. They were then combined with data from NSD, as is the case of the data on mayoral coalitions. I then classified each coalition manually according to the different criteria forming the basis for the different predictions, as was done with mayoral coalitions.

Some comments on the classification of committee coalitions are necessary. If the party affiliation of a leader is unidentifiable, the total committee coalition can normally not be classified. However, if the party affiliation of the chair of the control committee is the only unknown data for a specific municipality, the reduced committee coalition can be identified and classified. Thus, the number of identifiable reduced committee coalitions is higher than the number of total committee coalitions. In some municipalities the size of the total committee coalition can be found on the basis of information on the size of the reduced committee coalition. If the reduced committee coalition is oversized, then the total committee coalition must be oversized as well, regardless of the party affiliation (if any) of the leader of the control committee. Furthermore, for the 14 municipalities that do not have a separate control committee, the size of the total coalition is set equal to the size of the reduced coalition. These operations were performed to minimise the number of excluded units in the data set, and to reduce the difference between the identifiable numbers of total committee coalitions and reduced committee coalitions.

From the 1995-population of 435 municipalities, one had to be excluded because it practises a parliamentary system. For 66 municipal councils data were missing on the party affiliation of the leader of the control committee. In addition, for 20 municipal councils data were missing on the party affiliation of other leaders.
Table 4.2 shows the distribution of these elements of the data material.

Table 4.B *Municipal councils by missing data on party affiliation, and by representation or not of «Others»*

	Total committee coalitions		Reduced committee coalitions	
	Percentage	(N)	Percentage	(N)
Parliamentary system	0.2	(1)	0.2	(1)
Missing data on party affiliation	10.3	(45)	4.6	(20)
«Others» represented*	42.1	(183)	45.1	(196)
«Others» not represented	47.4	(206)	50.1	(218)
Sum	100.0	(435)	100.0	(435)

*Here, the term «Others» denotes parties and groups not represented in the Storting in 1993-97. These are the Pensioner's Party, the Greens, two right-wing extremist parties, the Communist Party, joint lists, local lists and other lists.

There are more municipal councils where «Others» are represented among the 414 municipalities with observable reduced committee coalitions than in the 389 municipalities where total committee coalitions are observable. In the group of municipalities used when testing mayoral coalitions, an even lower percentage of municipal councils containing «Others» was observed. This may have influenced the results of the tests.

5 Testing the classical theories: mayoral coalitions

The hypotheses to be tested in this chapter are generated from the general hypotheses derived in chapter 4. They are

H_1: *The mayoral coalition in each municipality is identical with a minimal winning coalition.*

H_2: *The mayoral coalition in each municipality is identical with a minimum size coalition.*

H_3: *The mayoral coalition in each municipality is identical with a minimal connected winning coalition.*

In addition, I also test the prediction that oversized mayoral coalitions will be formed. Owing to the inductive way this prediction is generated, I prefer not to present it as a formal hypothesis. Nevertheless, it is relevant in the presentation of the results of the testing of the other hypotheses.

In the following analysis, the parliamentary municipality, municipalities with missing data, with punching errors and/or municipalities where party splits occurred are all excluded from the data set. Thus, the following distributions of policy blind coalitions are based on the remaining municipal councils, i.e. 322 municipalities. These results are compared with the results from the 180 municipalities where no party splits occurred, and where «Others» are not represented. When the distribution of coalition types are based on theories that take into account policy motivations, these 180 municipalities are used as data set.

5.1 Parties and mayoral coalitions

Before testing the performance of the hypotheses, it may be interesting to consider some features of the coalitional diversity of the municipalities. No less than 118 different combinations of parties appear as coalition partners in the 322 municipal councils.[32] The most frequent combinations were Ap-SV (5.0%), H-KrF-Sp-V (5.0%), Frp-H-KrF-Sp (3.7%) and Frp-H-KrF-Sp-V (3.7%). This could indicate that an identical block pattern between socialistic and non-socialistic parties may often appear, as at the national level. The 114 other combinations, however, show no such pattern at all.

The traditional non-socialistic parties (KrF, Sp, H, V) are the most eager to join coalitions: they support the mayor in approximately 2/3 of all the municipal councils in which they are represented. That goes for «Others» as well. Ap is somewhat more reluctant, which indicates a similar attitude towards coalition formation as observed in national politics. The wing parties Frp, SV and RV are not as much involved in mayoral coalitions as the other parties are. With the exception of RV, all parties support the mayor in more than 50% of the municipal councils in which they are represented.

Table 5.1 shows how often the different parties join to form coalitions. We observe that the traditional partners V, Sp, KrF and H join coalitions with each other most often. SV and Ap are each other's most preferred coalition partners. These observations may indicate some block-based influence on coalition formation.

[32] Here, all «Other»-parties are counted as one collective party, named «Others». Hence, if each of these parties was counted separately, the number of combinations would be even larger.

Table 5.A *How often the different parties join each other in mayoral coalitions. Pairwise combinations. Percentage of municipal councils where both parties are represented*

	RV	SV	Ap	Sp	V	KrF	H	Frp	Others
RV		26.1	28.0	25.0	4.8	18.2	8.3	4.8	10.0
SV	26.1		38.0	31.8	30.4	30.9	22.6	11.3	31.6
Ap	28.0	38.0		31.8	31.3	33.1	26.2	13.6	34.8
Sp	25.0	31.8	31.8		51.7	77.4	52.3	45.5	49.6
V	4.8	30.4	31.3	51.7		53.8	49.0	33.6	41.3
KrF	18.2	30.9	33.1	77.4	53.8		54.7	44.5	42.3
H	8.3	22.6	26.2	52.3	49.0	54.7		47.5	39.1
Frp	4.8	11.3	13.6	45.5	33.6	44.5	47.5		37.7
Others	10.0	31.6	34.8	49.6	41.3	42.3	39.1	37.7	

5.2 Minimal winning vs. oversized coalitions

From table 5.2, we see that nearly 60% of the coalitions formed are oversized, while 40% are MWCs. Thus, this distribution seems to support the theory based on the assumption of consensual decisions - leading to the prediction that oversized coalitions will be formed.

Table 5.B *The distribution of minimal winning coalitions, oversized coalitions and minority coalitions. Municipal councils where «Others» are represented are included. N = 322 municipalities*

Coalition type	Percentage	(N)
Minimal winning coalitions	40.1	(129)
Oversized coalitions	59.3	(191)
Minority coalitions	0.6	(2)
Sum (N)	(100.0)	(320)

It might be that the presence of local or small parties («Others») gives a somewhat blurred impression of local coalition formation. No significant difference is observed, however, when «Others» is excluded from the data set. This signifies that there is no difference in the motives of politicians representing «Others» compared with the rest of the politicians. Thus, it seems reasonable to sum up the distributions of coalitions when electing mayor as approximately 60% oversized and 40% minimal winning.

5.3 Minimum Size Coalitions

When Riker refined his coalition theory, still on the basis of the size principle, he ended up with the prediction that MSCs would be formed. While necessarily performing less well than MWC predictions (the set of MSCs is a subset of MWCs), we should recognise that the MSC theory has the advantage of generating fewer predictions in each case. Thus, if the predictional success of MSC theory is close to the success of MWC, it can be a useful tool for predicting coalition formation. Table 5.3 shows the distribution of MSCs related to MWCs and all coalitions.

Table 5.C *The distribution of minimum size coalitions. Municipal councils where «Others» are represented are included*

	Percentage	(freq.)
MS coalitions of all coalitions formed	27.3	(88/322)
MS coalitions of all MWCs formed	68.2	(88/129)

From the results presented in table 5.2, it seems reasonable to argue that the predictional success of the MWC theory is somewhat limited. Nevertheless, as argued by Laver and Schofield (1990), owing to the enormous number of possible coalitions, it is better than random guessing. When «Others» are excluded from the data set, the MSC share of the MWCs increases slightly. We also observe that more than two thirds of the minimal winning coalitions observed also are minimum size coalitions. This observation contributes to strengthen the generalisability of Riker's theories based on size.

5.4 Minimal Connected Winning Coalitions

In this section, I shall examine the distribution of coalitions classified on Axelrod's assumptions of ordering parties along a single policy dimension. Such an ordering can be based on four methods (Laver and Schofield 1990): on expert judgements, on dimensional analysis of legislative behaviour, on dimensional analysis of mass survey

data, and on dimensional analysis of the content of policy documents. Several works have presented orderings of Norwegian parties along the socio-economic conflict dimension (see e.g. Lotsberg 1989; Laver and Schofield 1990:263; Rommetvedt 1991:124,150; Strøm and Leipart 1992:105-108; Narud 1996:82-93). I shall apply a «modified» expert judgement method when ordering the parties, in the sense that I rely on the orderings presented in these works, which themselves are based on different methods. With the exception of the position of Sp, most of these orderings are identical at an ordinal level.

Recent years have witnessed considerable debate about the position of Sp. Since the years of debate about EU membership, this party has been accused (especially by the parties to its right) of moving towards the left (Narud 1996:82-93).[33] Based on the orderings referred to above, and on the debate concerning Sp's position, I set up three orderings of the parties along the socio-economic dimension, where RV is the party farthest to the left and Frp is farthest to the right:

Ordering 1: RV - SV - Ap - V - Sp - KrF - H - Frp
Ordering 2: RV - SV - Sp - Ap - V - KrF - H - Frp
Ordering 3: RV - SV - Ap - Sp - V - KrF - H - Frp

Table 5.4 shows the distribution of the MCW coalitions based on the three orderings.

Table 5.D *The distribution of minimal connected winning coalitions. Municipal councils where «Others» are represented are excluded. Percentages (frequencies in parentheses). N = 180 municipalities*

	MCW coalitions	
Ordering 1 (RV-SV-Ap-V-Sp-KrF-H-Frp)	29.4	(53)
Ordering 2 (RV-SV-Sp-Ap-V-KrF-H-Frp)	15.6	(28)
Ordering 3 (RV-SV-Ap-Sp-V-KrF-H-Frp)	31.1	(56)

[33] An opinion poll among local politicians from the Sp tells that 56% first and foremost prefer a *national* coalition government with KrF and V as their partners (Kommunal Rapport 14:1996). However, 24% of these politicians support a coalition government including SV.

We see that orderings 1 and 3 result in a larger number of successful predictions than ordering 2. Another measurement of success may be the correctness of unique predictions. A unique prediction is a prediction resulting from one of the orderings only. Ordering 3 is the one producing the highest unique predictional success, that is, more of its unique predictions are correct than for orderings 1 and 2. Ordering 2 gives the lowest unique predictional success. The results can be interpreted to mean that the support for the MCW theory - which varies depending on the ordering of the parties - is weaker than found at the national level. When comparing the predictional ability of Riker's and Axelrod's theories below, I shall use all three orderings.

However, an alternative interpretation can be made, based on the superiority of MCW theory when tested at national level. It may be that the assumption of the existence of one dominant cleavage, found in all municipalities, not are met. If it existed, and was correctly operationalised, the predictional success would have been higher.

5.5 MW, MS and MCW Mayoral Coalitions

In this section, I shall compare the predictional ability of the different coalitional theories. Table 5.5 shows the distribution of the predictional successes of MWCs and MCW1, MCW2 and MCW3 respectively. MCW1 is based on ordering 1, MCW2 on ordering 2, and MCW3 on ordering 3.

The table shows that about 58% of the mayoral coalitions formed are neither minimal winning nor minimal connected winning, they are, in other words, oversized. When observing the performance of the MCW2, based on the ordering where Sp is treated as situated to the left of Ap, gives about 25% coalitions being minimal winning, but not connected. Using the other two operationalisations of the socio-economic conflict

dimension results in 11% of the coalitions being MWC but not MCW, that is, being minimal, but not connected along the left-right dimension.

Table 5.E *The distribution of minimal winning coalitions and minimal connected winning coalitions. Municipal councils where «Others» are represented are excluded. Percentages. N = 180 municipalities*

	MCW1	MCW2	MCW3
MWC, not MCW	11.1	25.6	11.1
MCW, not MWC	1.1	1.7	2.8
MWC and MCW	28.3	13.9	28.3
Neither MWC nor MCW	59.4	58.9	57.8
Sum	99.9	100.1	100.0
(N)	(180)	(180)	(180)

Hence, in addition to the large number of oversized coalitions, the most striking feature of the table is the relatively large share of coalitions that are explained by minimal winning coalition theory alone. Again, this is very largely because MWC produces a larger number of predictions than MCW does.

5.6 Discussion

The municipal data seem to provide some support for both H_1 and H_2, which stem from Riker's theories. As much as 40% of the coalitions are minimal winning - equal to the share observed at the national level in Europe - and of these, about 70% are minimum sized. H_3, which is derived from Axelrod's theory, receives less support than H_1 and H_2 do. The most striking feature, however, is the finding that about 60% of the coalitions are oversized.

Explanations of the relatively moderate support for Riker's size principle can be traced to several sources. First, two of Riker's assumptions are not met. Most important, the parties voting for the mayor form an informal coalition, which exists for that vote only; it is a voting coalition. Thus, no party controls the membership of the coalition autonomously. Any party can join the coalition if it wants to. Further, the implicit

assumption that a fixed and unambiguous rule of decision for defining whether the status of a coalition is winning or not has to exist is somewhat ambiguous. This is because different rules apply to the first and second round of voting, which may facilitate the formation of oversized coalitions. For instance, in municipal councils where one party is clearly the largest, the other parties may coalesce against it, and prevent it from getting the mayor in a second round. A second round of voting was needed in only 11 out of the 322 municipal councils.

Second, the (weak) constraints on interblock coalitions and on the coalitions including Ap reduce the size of the set of coalitions predicted. Thus, the probability of predictional success decreases. Ap *is* slightly more restrictive than the bourgeois parties in joining coalitions. Further, we saw that the non-socialistic parties joined each other in coalitions more often than they joined with other parties. Hence, the informal institutional constraints restrict the number of actual coalition alternatives.

Third, local factors are not considered in the model. The existence of a very popular/unpopular mayor may influence the coalition formation. Also, the size of the parties in the municipality may influence coalition formation. The largest or the second largest party might have a desire to stand out against the other parties. Further, the other parties might take a stand against one region-specific party, for instance against Sp in rural-dominated municipalities.

Axelrod has been criticised for predicting the right coalitions for the wrong reasons (Laver and Schofield 1990:102; see also Browne et al. 1984). Based on the assumption that conflicts are minimised by minimising and connecting coalitions, Axelrod never produces a satisfying explanation for why a connected coalition is less conflictual than others. H_3, which is derived from Axelrod's theory, seems to get less support than expected. This may be due to my ordering the parties in a way that is not in accordance with the reality of municipal socio-economic conflict dimensions. Obviously, a

potential source of error is the exclusion of «Others» from the data set. These could include important «bridging» parties.[34]

Since many of the coalitions are either oversized or are both MWC and MCW, the question of «position» versus «policy» cannot be answered explicitly. It seems that politics along the socio-economic dimension matter somewhat, assuming that Axelrod's theory is validly operationalised as H_3. However, this may not take into account the local dimension, which is certainly very important. Here, it is important to note that the possible existence of a local dimension helps to explain the relatively high degree of failure achieved when applying Axelrod's theories. It does not contribute to explain, however, why Riker's theories partly fail, or why so many oversized coalitions are formed.

The common notion of local politics as being office-oriented seems to get at least some support, assuming long term rationality.

The large number of oversized coalitions may indicate that the mayor is regarded as being a figurehead above politics. Moreover, the lack of parliamentarism may make it important for the party with the presumably strongest candidate to maximise support, in order to create a better climate within the municipal council for the four years to come. The presence of MWC may be explained by the presence of possible controversial candidates.

This explanation, based on Tsebelis (1990) and on Groseclose and Snyder (1996) holds that coalitions are made larger than necessary in order to avoid losing the established majority when voting on different issues. If the election of the mayor is seen as only

[34] For instance, Sørensen and Hagen (1997, prel. version) find that municipal representatives' preferences regarding taxation levels vary with party affiliation; representatives from Ap and SV (and V) prefer a higher level of taxation than imposed today, while representatives from H and Frp want a lower level. Representatives from «Others» place themselves somewhere between the socialistic and the bourgeois parties.

the first of all the issues to be voted on during the next four years, there is a high probability that shifting coalitions will emerge (cf. Bukve 1996). The fact that the coalition behind the mayor is not a formal one makes it easier for a party to withdraw its support in the case of possible controversial issues. Thus, parties will strive to get their candidate elected with the approval of most of the other parties, perhaps sharing out other important positions to more parties than required to win a bare majority. Electing the mayor is an issue of high symbolic importance. It may indicate which parties will try to co-operate in the municipal council. In other words, we must suppose the existence of long-term rationality. The lack of parliamentarism functions as an incentive to maximise support and form oversized coalitions. Most parties do not like being out of office for four years. This encourages a climate for bargaining about all positions, in order to obtain some influence in the coming period. To sum up this argument: informal coalitions facilitate the formation of oversized coalitions when electing the mayor, because of the importance attached to this issue, and because of the associated bargainings about other positions.

Connected to this argument, a difference may exist between parties that are able to form a MWC and parties that do not necessarily have to be included. It may be the case that parties in the latter group vote for the mayor, either to signal willingness to co-operate or simply to approve a candidate if they lack an alternative of their own, or perhaps because of a candidate's personal characteristics. An argument can be raised about the consequences of the EU referendum in November 1994. The consensus-orientation combined with a wish to «heal the wounds» may have contributed to the formation of oversized mayoral coalitions.

6 Testing the classical theories: committee coalitions

The general assumption underlying the change of operational definition of coalitions - from mayoral coalition to committee coalition - is that there could be operationalisations of coalitions that represent the actual conflictual level more thoroughly than mayoral coalitions do. I shall now test the hypotheses derived in chapter 3 once more, with the type of the committee coalitions as dependent variable. The hypotheses tested are

H_4: *The committee coalition in each municipality is identical with a minimal winning coalition.*

H_5: *The committee coalition in each municipality is identical with a minimum size coalition.*

H_6: *The committee coalition in each municipality is identical with a minimal connected winning coalition.*

In addition, I shall also test the prediction that oversized coalitions are being formed, in the same way as carried out in chapter 5. All predictions will be tested operationalising dependent variable as total committee coalitions and reduced committee coalitions, respectively. From here on, I shall sometimes drop mentioning the mayoral and the vice-mayoral positions when commenting and discussing committee coalitions. Nevertheless, the parties controlling these positions are always parts of these coalitions. The positions included will be denoted as «chairs».

In the following analyses, the parliamentary municipality and municipalities with missing data on party affiliation are excluded from the data sets. However, as laid out above, some municipal councils with missing data on the party affiliation of the leader of the control committee have been «re-instated», in order to increase the number of

total committee coalitions analysed. Thus, the distribution of policy blind coalitions is based on the remaining municipal councils, i.e. 389 with identifiable total committee coalitions and 414 with identifiable reduced committee coalitions, respectively. These results are compared with the results from municipalities where «Others» not are represented, either, i.e. 206 and 218, respectively. When testing the predictions that take into account policy motivations, these municipalities where «Others» not are represented are used as basis for the data sets.

6.1 Parties and committee coalitions

As when I tested the predictions concerning mayoral coalitions, I shall begin by considering some distributions of parties and committee coalitions. First, let us observe the number of different combinations of parties controlling the chairs of the committees.

Table 6.A *Combinations of parties in committee coalitions*[35]

	Total committee coalitions	Reduced committee coalitions
Number of identifiable coalitions	348	414
Number of observed combinations	93	94
Most frequent combinations	Ap-Sp-KrF-H (10.3%) Ap-Sp-H (7.2%) Ap-Sp (6.0%)	Ap-Sp-KrF-H (7.7%) Ap-Sp-H (7.0%) Ap-Sp (6.8%)
Single parties controlling all the chairs	Ap (3.2%) H (0.3%)	Ap (8.0%) H (0.5%) Sp (0.7%)

From table 6.1, we see that the number of combinations of committee coalitions is smaller than the number of combinations of mayoral coalitions. This is probably an effect of the difference between mayoral and committee coalitions as regards control of their membership. While no party can be denied voting in favour of the mayor, a party

not controlling a majority of the representatives can certainly be denied the access to a chair. The most frequent combinations include Ap and one or more of the traditional bourgeois parties. This might indicate that no specific block partition exists. We also note that Ap controls all the chairs in a large number of municipalities, especially when the chair of the control committee is excluded from the coalitions.

It is also interesting to see how often the different parties join each other in the committee coalitions. This is reported in tables 6.2 (for total committee coalitions) and 6.3 (for reduced committee coalitions).

Table 6.B *How often the different parties join each other in total committee coalitions. Pairwise combinations. Percentage of municipal councils where both parties are represented*

	RV	SV	Ap	Sp	V	KrF	H	Frp	Others
RV		0	2.9	2.9	3.2	3.1	2.9	3.4	0
SV	0		18.4	14.0	6.4	4.8	12.2	2.8	8.1
Ap	2.9	18.4		60.4	26.8	42.0	53.3	20.2	35.0
Sp	2.9	14.0	60.4		25.1	38.1	48.8	15.1	29.5
V	3.2	6.4	26.8	25.1		20.7	23.8	6.9	18.9
KrF	3.1	4.8	42.0	38.1	20.7		37.9	13.3	21.9
H	2.9	12.2	53.3	48.8	23.8	37.9		21.5	23.4
Frp	3.4	2.8	20.2	15.1	6.9	13.3	21.5		5.6
Others	0	8.1	35.0	29.5	18.9	21.9	23.4	5.6	

No clear pattern emerges in table 6.2. We see that Ap is the party most frequently joined by other parties in coalitions. This is not surprising, since Ap very often is the largest party in the municipal council, making it highly probable that it will control one or more of the chairs. In table 6.3, we see the same figures for the reduced committee coalitions.

[35] Here, all «Other»-parties are counted as one collective party, named «Others». Hence, if each of these parties was counted separately, the number of combinations would be even larger.

Table 6.C *How often the different parties join each other in reduced committee coalitions. Pairwise combinations. Percentage of municipal councils where both parties are represented*

	RV	SV	Ap	Sp	V	KrF	H	Frp	Others
RV		0	0	0	0	0	0	0	0
SV	0		14.0	10.4	4.5	4.4	7.0	0.7	4.4
Ap	0	14.0		44.7	19.1	33.8	35.4	7.3	24.1
Sp	0	10.4	44.7		19.9	34.7	41.3	11.0	22.5
V	0	4.5	19.1	19.9		17.8	18.5	6.9	13.2
KrF	0	4.4	33.8	34.7	17.8		32.6	10.2	17.5
H	0	7.0	35.4	41.3	18.5	32.6		17.5	17.3
Frp	0	0.7	7.3	11.0	6.9	10.2	17.5		5.6
Others	0	4.4	24.1	22.5	13.2	17.5	17.3	5.6	

A comparison of total versus reduced committee coalitions does not reveal any changes indicating a differing coalition pattern. Our observations tell us that the principle of consensus probably ranks high in the municipal councils. While some indications of a block-influenced pattern could be traced in the set of mayoral coalitions, no such pattern can be detected here. Further, there seems to be a connection between the general size of a party and how often it engages in coalitions with the other parties. For instance, Ap, which is very often the largest party in a municipality, often appears in the same coalition as another usually large party, Sp. The small parties are engaged to a lesser degree with other parties. Thus, in spite of the use of a plurality vote when electing the chairs, these figures indicate that the norm of proportionality works as a strong unwritten rule when establishing the committee coalitions. Of course, the figures shown here are just indications. They should be put to far more severe tests before drawing conclusions.

6.2 Committee coalitions: minimal winning vs. oversized

I shall now test the predictional ability of the hypotheses generated from Riker's theories. How often does the group of parties controlling the chairs constitute an MWC?

Table 6.D *The distribution of minimal winning committee coalitions, oversized committee coalitions and minority committee coalitions. Municipal councils where «Others» are represented are included.*

	Total committee coalitions		Reduced committee coalitions	
	Percentage	(N)	Percentage	(N)
Minimal winning coalitions	17.0	(66)	31.6	(131)
Oversized coalitions	77.4	(301)	53.6	(222)
Minority coalitions	5.7	(22)	14.7	(61)
Sum	100.1	(389)	99.9	(414)

From table 6.4 we see that 17% of the total committee coalitions are minimal winning, while 32% of the reduced committee coalitions are minimal winning coalitions. This indicates that the consensus principle does not rule alone. Especially when the parties holding only the control committee chair are excluded, the large number of MWCs is worth noting. Nevertheless, the most striking feature, of course, is the large number of oversized coalitions formed.

The corresponding distributions found when units where «Others» are not represented in the municipal council are excluded, do not differ significantly from the ones reported above. It seems that the presence or absence of «Others» in the municipal council does not have influence on the size of the committee coalitions formed.

6.3 Committee coalitions: minimum size

When predicting the formation of minimum size coalitions, the results should be easier to interpret, at least for each municipal council separately. If an MSC is formed, it seems probable that this is a sign of a higher level of conflict within the municipal council than in other municipalities. Table 6.5 reports the results when the committee coalitions are tested against this hypothesis.

Table 6.E *The distribution of minimum size committee coalitions. Municipal councils where «Others» are represented are included*

	Total committee coalitions		Reduced committee coalitions	
	Percentage	(freq.)	Percentage	(freq.)
Minimum size coalitions of all coalitions formed	5.9	(23/389)	16.2	(67/414)
Minimum size coalitions of all MWCs formed	34.8	(23/66)	51.1	(67/131)

Riker's theories do not receive much support from the data material on committee coalitions. As expected, the percentage of MSCs increases when the reduced committee coalitions are used as the dependent variable. This tends to imply that the chair of the control committee is often given to a party representing the «opposition». We further observe that more than a third of the total committee coalitions, and more than half of the reduced committee coalitions are both minimal winning and minimum size. We observe no significant changes when all the municipal councils where «Others» are represented are excluded.

6.4 Minimal connected winning committee coalitions

In this section, I shall examine the distribution of the committee coalitions, based on the classification resulting from Axelrod's theories. The orderings of the parties along the socio-economic dimension are based on the same assumptions and reservations as made above (cf. section 5.4). Thus, the orderings set up and tested are the following, where RV is the party situated farthest to the left on the socio-economic conflict dimension, and Frp is farthest to the right:

Ordering 1: RV - SV - Ap - V - Sp - KrF - H - Frp

Ordering 2: RV - SV - Sp - Ap - V - KrF - H - Frp

Ordering 3: RV - SV - Ap - Sp - V - KrF - H - Frp

Table 6.6 shows the distribution of the MCW coalitions based on the three orderings.

Table 6.F *The distribution of minimal connected winning committee coalitions. Municipal councils where «Others» are represented are excluded. Percentages (frequencies in parentheses).* $N_{Total\ comm.\ coal.} = 186$ *municipalities;* $N_{Red.\ comm.\ coal.} = 218$

	MCW coalitions	
	Total committee coalitions	Reduced committee coalitions
	Perc. (freq.)	Perc. (freq.)
Ordering 1 (RV-SV-Ap-V-Sp-KrF-H-Frp)	9.1 (17)	19.3 (42)
Ordering 2 (RV-SV-Sp-Ap-V-KrF-H-Frp)	9.1 (17)	13.8 (30)
Ordering 3 (RV-SV-Ap-Sp-V-KrF-H-Frp)	9.1 (17)	17.9 (39)

Regardless of the ordering used when observing the distribution of the total committee coalitions, 9% of the coalitions are minimal connected winning.[36] Of the set of reduced committee coalitions, the percentage of MCW coalitions varies between 14% and 19%. There are only small differences with regard to unique predictional success.

Axelrod's theories do not receive much support when tested on committee coalitions. Again, however, a reasonable explanation may be that a nationally based socio-economic conflict dimension of greater relevance than other conflict dimensions is absent when committee coalitions are formed.

6.5 MW, MS and MCW committee coalitions

In this section, I shall compare the predictional ability of the different coalitional theories on the sets of the committee coalitions. Table 6.7 is based on the set of total committee coalitions, and shows the distribution of the predictional successes of MWCs and MCW1, MCW2 and MCW3 respectively. MCW1 is based on ordering 1, MCW2 on ordering 2, and MCW3 on ordering 3.

[36] Of these, 9 were MCWs along each of the orderings.

Table 6.G *The distribution of minimal winning committee coalitions and minimal connected winning committee coalitions. Municipal councils where «Others» are represented are excluded.* $N_{Total\ comm.\ coal.} = 186$ *municipalities*

	Total committee coalitions		
	MCW1	MCW2	MCW3
MWC, not MCW	11.3	9.7	9.7
MCW, not MWC	1.6	0	0
MWC and MCW	7.5	9.1	9.1
Neither MWC nor MCW	79.6	81.2	81.2
Sum	100.0	100.0	100.0
(N)	(186)	(186)	(186)

As was the case with the data set based on the observed mayoral coalitions, neither of the theories tested achieves much support. Approximately 80% of the total committee coalitions are neither minimal winning nor minimal connected winning. Table 6.8 shows the corresponding figures for the data set based on reduced committee coalitions.

Table 6.H *The distribution of minimal winning committee coalitions and minimal connected winning committee coalitions. Municipal councils where «Others» are represented are excluded.* $N_{Red.\ comm.\ coal.} = 218$

	Reduced committee coalitions		
	MCW1	MCW2	MCW3
MWC, not MCW	15.1	19.3	15.6
MCW, not MWC	1.4	0	0.5
MWC and MCW	17.9	13.8	17.4
Neither MWC nor MCW	65.6	67.0	66.5
Sum	100.0	100.1	100.0
(N)	(218)	(218)	(218)

Also in the set of reduced committee coalitions, a large part (about 2/3) of the reduced committee coalitions are not explained either by Riker's or by Axelrod's theories. Further, we notice that - both for total and for reduced committee coalitions - Riker's theories have a larger predictional success than Axelrod's. While between 10% and

19% of the coalitions are minimal without being connected, only a couple of coalitions are connected without being minimal.

6.6 Discussion

In this chapter, we have seen how some of the «classical» coalition theories have performed when predictions generated by them have been tested against data sets consisting of total committee coalitions and reduced committee coalitions, respectively. The observations seem to point in the same direction: the predictional ability of these theories is generally low. 17% of the total committee coalitions and 32% of the reduced committee coalitions, respectively, are minimal winning. On the contrary, more than 75% of the total committee coalitions, and more than 50% of the reduced committee coalitions are oversized.

A first point to make is connected to the operationalisation of the dependent variable: I assume that the same parties voted in the same way in all the elections, implying that the parties that voted in favour of the mayor are also assumed to vote in favour of all the other chairs. This may not be the case. If one person has occupied the chair of a committee for a long time, he/she might be re-elected (or not) independent of party affiliation, because the representatives «know» the person and his/her abilities. Further, informal coalitions may have been observed with different members for the different elections. If different coalitions of parties support different chairs, the committee coalition emerging may appear large, because more parties are involved. Hence, the correctness of the assumption of bargainings and co-operation prior to the elections can be questioned. The implications for the interpretation of the observations can be serious. If little bargaining and co-operation takes place, the concept of a committee coalition becomes rather meaningless. It seems reasonable to assume, however, that some kind of negotiations do take place, owing to the fact that the chairs are elected for four years, and thus the elections should be of some importance to the parties.

A more serious objection concerns the assumed importance of pre-election bargainings: they probably take place, but how important are they? The key question is how strong the norm of consensus often observed in municipal politics is. The principle of proportionality could have some important influence on the distribution of chairs between the parties. If it is a norm in the municipality that parties should control a certain number of chairs in proportion to their number of representatives in the municipal council, negotiations have influence on the distribution in a very modest sense. Disagreement concerning whether the largest party should have two or three chairs, and on how the chairs are distributed within the group of the largest parties are examples of matters that can be decided during such bargainings. This objection has implications for the validity of the definition of committee coalitions, and thus the interpretations based on the observations.

If the defined committee coalitions to a large degree mirror which parties are the largest in the municipal council, there arises a problem of validity. So, the observed coalitions tell nothing about conflictual patterns. All they reveal is that the parties in the municipal council more or less agree on the number of chairs awarded to each party. As reported above (tables 6.2 and 6.3), this seems to be the case in so many municipalities that it influences the general committee coalition pattern. The largest parties nation-wide form coalitions with each other more frequently than with other parties. This indicates a pattern of proportionality. However, this objection is somewhat weakened by the observation made that quite a few minimal committee coalitions do in fact exist. If the norm of proportionality were absolute, a near 100% of the coalitions would be oversized. This is not the case.

When commenting upon the observations made, the most striking feature, of course, is the large number of municipalities with oversized committee coalitions. This is probably due to tradition-based principles of consensus and proportional representation

when deciding political positions. Some of the oversized coalitions might also be explained by different informal voting-coalitions being responsible for different chairs.

Some comments should also be made concerning the committee coalitions that are not oversized. As predicted, the average size of the reduced committee coalitions is smaller than that of the total committee coalitions. The amount of MWCs is almost doubled, while the amount of minority coalitions is almost tripled. In absolute numbers, the increase is the largest for the MWCs. These results may indicate two tendencies. The first concerns the possibility of the existence of a norm of giving the chair of the control committee to the «opposition». This may be the case in the many municipalities where an oversized total committee coalition changes into an MWC when the chair of the control committee is excluded. Parties representing a bare majority in the municipal council might agree to distribute all the chairs between them, but put the power invested in the control committee into the hands of a party outside the majority group. The second tendency concerns the municipalities where a minimal winning total committee coalition becomes a minority coalition when the party holding the chair of the control committee is excluded. Here, the level of conflict seems to be even higher - a bare majority grasps all the chairs.

The observations on minimum size coalitions indicate the same: the norm of proportional representation is not absolutely dominant. The increase in the number of MSCs when the focus is changed from total to reduced coalitions points in the same direction as above: in some municipalities the chair of the control committee is held by an «opposition» party. The relatively large size of the MWCs that are also MSCs may strengthen a hypothesis implying a higher conflictual level in these municipalities: a bare majority controls the important political positions.

As was the case when studying mayoral coalitions, Axelrod’s predictions are to a large degree incorrect. Again, however, we meet potential problems in regard to

operationalisation and validity: it is probably impossible to specify a general, dominant dimension for all municipalities. This is a test of whether a general socio-economic cleavage, similar to the one found at a national level, is a dominant force in Norwegian municipalities, rather than a test of Axelrod's theories. Such a dimension does not seem to be present. Again, however, the tautological problems still exist: we cannot assess the validity of an operationalisation and the predictional ability of a theory, based on the same operationalisation simultaneously. If a unique dominant dimension could be identified for each of the municipalities, a proper test could have been performed. These reservations notwithstanding, it seems improbable that a national dominant conflict dimension of another sort is reflected on the municipal level. Assuming this, but regarding any of the three orderings of parties made above as best approximations, the Axelrod-generated predictions performs poorly. Pure local positional motives seem to be present to a larger degree in themselves than mixed up with nationally based policy motivations.

However, here, as in the case of mayoral coalitions, the most striking observation is the large amount of oversized coalitions. Why oversized coalitions are formed should be further elaborated. As it is, the coalition formation process when electing the mayor seems, on the whole, to be unexplained by previous theories to a large degree. The theories perform also poorly when used to explain the formation of committee coalitions. The inductively generated predictions that oversized coalitions will be formed are the ones that receive the most support. In the following chapters, I try to explain the dominance of oversized coalitions by means of quantitative, multivariate analyses.

7 Multivariate analysis: mayoral coalitions

One of the main advantages of using data from municipalities is that a large number of coalitions are available for analysis. This makes it possible to perform statistical analyses on the data-material, thereby increasing the possibility for generalising the results from the sample to the universe. In this chapter, I use the technique of logistic regression to analyse models that attempt to predict the size of the mayoral coalitions formed. In the next chapter, I analyse committee coalitions in the same way, using the same technique and models. The goal of the analyses is to find out whether variables exist which have influence on the probability of oversized coalitions being formed. As I have shown in the previous chapters, the percentage of oversized coalitions in Norwegian municipalities is rather high. A «common-sense» explanation of this is based on the large number of small municipalities in Norway, where politics depend on local factors and on the persons involved in politics rather than on national conflict dimensions.

It has been claimed that it is difficult to interpret the logit model substantially (Sørensen 1989:79). However, if one is merely interested in the *direction* of the effects, it is sufficient to look at the sign of the logit coefficients, and on the significance tests (Sørensen 1989:79). This is no more difficult than in any other multivariate analysis model. This is also the goal of this analysis. As mentioned several times above, I assume that what I have coined «local» factors influence the formation of the mayoral coalition more than any other single independent variable does. A formal quantitative multivariate analysis could never describe this satisfactory. As I demonstrate below, however, I try to model *some* of these local factors quantitatively. This may lead to a better understanding of how certain factors influence local coalition behaviour.

I begin the chapter by describing the models to be analysed, and discussing whether they meet the necessary assumptions required by the method I use, namely logistic regression. The logistic regression method is described and discussed in Appendix 2. Then, I report the results from the analyses, before interpreting them.

7.1 The models

I assume that many factors have influence on the formation of mayoral coalitions. In this section, I present a set of variables assumed to have influence on the probability that oversized coalitions will be formed. I specify four versions of a general model for the relationship between the dependent variable COALTYPE and these independent variables. Thereafter, I discuss whether these models meet the regression assumptions or not.

7.1.1 The variables

The dependent variable

An oversized coalition is assumed to indicate a climate for consensus building, while coalitions that are not oversized indicate a higher level of conflict/a higher intensity of conflict. This is somewhat independent of whether the actor's motives are office or policy. If I find factors that influence the probability that oversized coalitions will form, I take it as an indication of these factors contributing to the level of conflict in the municipality.

The dependent variable COALTYPE is made dichotomous by classifying all municipal coalitions as either «not oversized» (coded 0) or «oversized» (coded 1). The definition of an oversized coalition is a coalition that includes parties that are not necessary to hold a majority in the municipal council. Thus the municipalities with minority coalitions are classified as «not oversized». A minimal coalition will lose its majority if any of the coalition parties withdraw its support. This implies that most of the

Axelrodian minimal *connected* winning coalitions will be classified as «not oversized», while a few will be put in the «oversized»-category. The cases where party splits occurred are excluded from the data set.

The independent variables

The independent variables assumed to have influence on the coalition formation can be classified in two groups: *structural* variables and *political* variables. The first structural variable to be considered is size of the municipality. It seems reasonable to assume that the size of the municipality may have an influence on whether oversized coalitions are formed or not.[37] With increasing size, the stakes involved may become higher, and conflicts may become more intense. Oversized coalitions can be regarded as an indication of low intensity of conflict. The probability of oversized coalitions being formed decreases on average with increasing size of municipality, when all other independent variables are controlled for, i.e., kept at a constant value.[38] The size is operationalised as the number of inhabitants in the municipality on 1 January 1996, as the variable SIZE.

Another structural variable to be tested is the geographical location of the municipality. Norway is a sparsely populated country, containing only a few large towns. Indications are found, showing that centrally located municipalities tend to carry out (political and administrative) organisational changes to a larger degree than other municipalities (Gravdahl and Hagen 1997:64). Then, a reasonable assumption may be that the tradition for consensus-oriented activities are more weakened in these municipalities, while municipalities situated far from large towns can be assumed to experience a lesser degree of conflict intensity. This is operationalised as the variable CENTRAL, which is an ordinal level variable constructed by Statistics Norway. The variable is

[37] «Among other things, the size of the municipality influences on the local-political behaviour.» (Lotsberg 1989, referring to Dahl and Tufte 1973).

based on the municipality's geographical location, measured in terms of quickest travelling time (air travel excepted) to a geographical centre containing central, high-order functions. The data are from 1990, or as close to 1990 as possible. Based on this system, each municipality is assigned a centrality value ranging from 1 to 7, with 1 describing the municipalities with the lowest degree of centrality, and 7 the highest.

CENTRAL is a categorical variable. Below, I have treated it in two different ways. First, it is represented by six dummy variables, where the category representing the third least central municipalities are made the reference category.[39] The results when the dummy variables are used are reported in models 1 and 2 in table 7.2 below. Second, it is treated as a continuous variable. When the «continuous» approach is used, the results are reported in models 3 and 4 in the same table.

A third structural variable describes the revenues of the municipality. A municipality benefiting from a high level of income can be considered as enjoying a higher degree of economic freedom than a poor municipality. However, it is difficult to estimate the direction of this influence on coalition formation. Coser (1956, in Hovi and Rasch 1996:144) postulates a hypothesis concerning the relationship between the unity of a group and its reaction to external pressure. A group with a high degree of unity reacts to external pressure by increasing its unity, while a group with a low degree of unity becomes even more split. If this external pressure is operationalised as income level, the internal degree of conflict may become either more or less intense. A poor municipality can have a high level of conflict, owing to a harsh debate on allocation of sparse resources. It may also be the case, however, that the poor economy serves to unite the local politicians. A similar argument can be used for rich municipalities. A

[38] When interpreting results from regressions in general, it is always necessary to remember that the effects of the other variables are controlled for, and that the estimates found are average effects. However, to avoid tiring the reader by adding this statement every time I make a prediction or an interpretation, I leave it out.
[39] Category 3 is chosen as the reference category simply because it contains the median municipality on this variable in the sample of the 318 municipalities.

variable (INCOME) is constructed describing the municipality's degree of economic freedom, operationalised as net income. This is defined as the municipality's total sum of gross working expenses minus its total sum of income in 1994. The variable is measured in NOK 10 000 per 1000 inhabitants, where the number of inhabitants is the average of the numbers of inhabitants on 1 January 1994 and 1 January 1995 respectively.

A first political variable may be whether one party controls a majority of the representatives in the municipal council alone, or not. This is described by the variable ONEPARTY. A reasonable assumption is that if a party controls the majority alone, a minimal coalition will be formed. This party will not have any incentive to include any other parties in the coalition. In an article discussing coalition formation at the *national* level, Strøm (1997:54-55) states that «[p]arties that can take office by themselves rarely decline that opportunity.»

A second political variable which may be of importance is whether there is a socialistic, a bourgeois, or a no-block majority in the municipal council. Here, I find it difficult to predict the direction of the influence of this variable on coalition formation. As mentioned above, however, «block-thinking» is a striking feature of Norwegian national politics, and may manifest itself in some way at the level of local politics. This variable is operationalised as two dummy variables, BLOCKSOS and BLOCKBOU. BLOCKSOS takes the value 1 if the socialistic parties represented in the municipal council represent a majority together, and takes the value 0 if not. Here, socialistic parties are defined as RV, SV and Ap. BLOCKBOU takes the value 1 if the bourgeois parties represented in the municipal council represent a majority together, and takes the value 0 if not. Here, bourgeois parties are defined as V, Sp, KrF, H and Frp. Thus, the municipal councils where none of the blocks represent a majority function as a reference category, taking the value 0 on both BLOCKSOS and BLOCKBOU. The results of this operationalisation is reported in models 1 and 3 below. In models 2 and 4, I

group together the municipal councils where there is either a socialistic or a bourgeois majority (coded 1), to see if there is any difference between them, and the municipal councils where none of the blocks hold the majority (coded 0). This is described by the variable NOBLOCK. A reasonable prediction seems to be that oversized coalitions are formed more seldom when neither a socialistic nor a bourgeois block holds the majority, because in such cases it is necessary to achieve agreements across the demarcation lines traditionally found in Norwegian politics.

A fourth political variable is based on the conflict emerging from the EU referendum of November 1994. The conflict was harsh, and probably had not been forgotten one year later. It is difficult to measure how deep the conflict stretched in the municipalities. One reason is that, in many cases, the EU issue split parties internally. Nevertheless, I have tried to model the issue by dividing the municipalities into two categories in the variable EU: the ones where a majority of the *inhabitants* voted «No» (coded 0) and the ones where they voted «Yes» (coded 1). On the national level, about 53% of the voters voted «No». At the municipal level, however, about 86% of the municipalities ended up with a majority that voted «No». In the remaining 14%, the share of «Yes»-votes was in most cases between 50% and 60%. It passed 70% in only 2 municipalities. It is interesting to find, then, out whether there was any significant difference in the coalitions that supported the mayor in the two groups of municipalities one year later. On the one hand, we can expect the conflict level to be higher in the «yes-municipalities», owing to the relatively equal division of voters, which may have influenced the municipal election results. On the other hand, the probability of an oversized mayoral coalition could be higher in these municipalities, owing to the mayor's potential uniting function, and the desire for a return to «normal» politics.

A fifth political variable of possible influence is the degree of party fragmentation in the municipal council. I have operationalised this as the degree of party

fractionalisation in the municipality in terms of the *Herfindahl-Hirschman concentration index*, HH (Taagepera and Shugart 1989:79). The index value of each unit is calculated as $HH = \sum_{i=1}^{I} p_i^2$, where p_i is the share of the seats in the municipal council held by party i. The index, which is inversely related to fragmentation, takes the maximum value of 1 when a single party holds all the seats in the municipal council. It takes the minimum value of 1/I when the seats are equally divided among the I parties. The fragmentation is described by the variable HH-INDEX. Predictions can be made both for an increase or a decrease in the probability of oversized coalitions being formed as the degree of fragmentation increases. Greater fragmentation implies that the number of potential coalitions that can be formed increases. It also implies that more interests are probably represented, making it more difficult to agree on any common denominator. On the other hand, a bundle of such parties also implies that they can agree on joining in a coalition to secure support for their «core» issues. They can also signal support and willingness to co-operate on issues not belonging to their own «core» issues.

A last variable that can be described as political is the percentage of female representatives out of the total number of representatives in the municipal council. It has been shown that female representatives in municipal councils show behavioural patterns different from those of their male counterparts (Hagen 1995b). For instance, it is found that men, to a larger degree than women, take their own formal status in the political hierarchy into account when deciding how to act. A large female percentage may also be an indication of a politically «modern» climate, involving conflictual dimensions similar to the ones found at the national level. A large female percentage of the representatives may have influence on the climate surrounding the coalition bargainings. If the attitude is to resolve conflicts by discussion, inspired by the consensus model, a larger share of female representatives may break down traditional patterns of co-operation. The effects of a changing female percentage of

representatives cannot be discovered without time-series data. The data used here are static. I still find it interesting, however, to look for effects across the units. The percentage of female representatives out of the total number of representatives in the municipal council is described by the variable FEMALE.

7.1.2 The models and the regression assumptions

As indicated above, I specify the general model in four versions, differing with respect to (1) whether the variable CENTRAL is treated as a set of six dummies or as one continuous variable; and (2) whether the party-block variable is treated as a set of two dummies or as one dichotomous variable:

Model 1: $L = \beta_0 + \beta_1 \text{SIZE} + D_1\text{CENTRAL}(1) + D_2\text{CENTRAL}(2) + D_4\text{CENTRAL}(4) + D_5\text{CENTRAL}(5) + D_6\text{CENTRAL}(6) + D_7\text{CENTRAL}(7) + \beta_2\text{INCOME} + \beta_3\text{ONEPARTY} + D_8\text{BLOCKSOS} + D_9\text{BLOCKBOU} + \beta_4\text{EU} + \beta_5\text{HH-INDEX} + \beta_6\text{FEMALE},$

Model 2: $L = \beta_0 + \beta_1 \text{SIZE} + D_1\text{CENTRAL}(1) + D_2\text{CENTRAL}(2) + D_4\text{CENTRAL}(4) + D_5\text{CENTRAL}(5) + D_6\text{CENTRAL}(6) + D_7\text{CENTRAL}(7) + \beta_2\text{INCOME} + \beta_3\text{ONEPARTY} + \beta_5\text{NOBLOCK} + \beta_6\text{EU} + \beta_7\text{HH-INDEX} + \beta_8\text{FEMALE},$

Model 3: $L = \beta_0 + \beta_1 \text{SIZE} + \beta_2\text{CENTRAL} + \beta_3\text{INCOME} + \beta_4\text{ONEPARTY} + D_1\text{BLOCKSOS} + D_2\text{BLOCKBOU} + \beta_5\text{EU} + \beta_6\text{HH-INDEX} + \beta_7\text{FEMALE},$

Model 4 $L = \beta_0 + \beta_1 \text{SIZE} + \beta_2\text{CENTRAL} + \beta_3\text{INCOME} + \beta_4\text{ONEPARTY} + \beta_5\text{NOBLOCK} + \beta_6\text{EU} + \beta_7\text{HH-INDEX} + \beta_8\text{FEMALE},$

where, for all models, D denotes the coefficient associated with each of the dummy variables; and $L = \ln\left(\frac{\text{P(COALTYPE} = 1)}{1 - \text{P(COALTYPE} = 1)}\right)$.

Before the models are applied to the data it has to be checked whether the regression assumptions are met. I begin with the specification assumptions. The dependent variable COALTYPE is a dichotomous one, and is assumed to depend on the set of independent variables outlined above. What I am interested to determine is the probability that an oversized coalition will be formed, that is, P(COALTYPE|X=1). Whether the next assumption is met or not is, however, more doubtful. The models do certainly not include all the variables necessary to make correct predictions concerning whether the coalition formed will be oversized or minimal. A lot of local factors influence that outcome, factors that cannot be modelled properly with the data available to me.

The assumption that none of the independent variables are themselves dependent on the size of the coalition (the dependent variable) is met. The values of all the independent variables stem from a point in time prior to electing the mayor.

Turning to the other assumptions, it is reasonable to assume that the observations on Y are statistically independent. The size of a coalition in one municipal council will hardly be dependent on what types of coalitions which will be formed in other municipal councils. However, one reservation should be made: after the election, the media flow over with expectations and comments, often based on nation-wide results. This could have influence on the bargainings and the coalitions formed.

Further, there should be no exact linear relationship among the X_{ik}'s, implying firstly that the number of municipal councils in the sample is larger than the number of independent variables. This assumption is certainly met. Secondly, there must be some variation across the observation on each independent variable. Simple, descriptive statistics for each of the variables are given in table A3.2 in appendix 3. The six dummy variables describing centrality are not included in the correlation matrix. They

are sufficiently represented by CENTRAL. There is variation across every independent variable. Thirdly, there should not be perfect or near perfect correlation between the independent variables. The correlations between all the variables are shown in table 7.1. No multicollinearity occurs between the variables, there are no correlation values above 0.80, which is normally considered as the limit for such a test. Hence, it is safe to proceed with the analysis.

Table 7.A *Correlations between all the variables in the models applied in the quantitative multivariate analyses, treating mayoral coalitions as dependent variable (Person correlation coefficients,* r*). N= 318*

	COAL-TYPE	SIZE	CENT-RAL	IN-COME	ONE-PARTY	BLOCK-SOS	BLOCK-BOU	NOBLOCK	EU	HH-INDEX	FEMALE
COALTYPE		0.09	-0.05	-0.02	0.12**	0.03	0.08	0,13**	0.10***	0.01	-0.11***
SIZE	0.09		0.36*	-0.33*	-0.10***	-0.02	0.03	0,02	0.47*	-0.24*	0.15*
CENTRAL	-0.05	0.36*		-0.50*	-0.06	-0.04	0.06	0,03	0.42*	-0.25*	0.05
INCOME	-0.02	-0.33*	-0.50*		0.08	-0.01	-0.09***	-0,13**	-0.29***	0.30*	-0.08
ONEPARTY	0.12**	-0.10***	-0.06	0.08		0.43*	-0.36*	-0,02	-0.03	0.64*	-0.01
BLOCKSOS	0.03	-0.02	-0.04	-0.01	0.43*		-0.63*	0,23*	0.03	0.38*	0.12**
BLOCKBOU	0.08	0.03	0.06	-0.09***	-0.36*	-0.63*		0,62*	-0.04	-0.44*	-0.02
NOBLOCK	0,13**	0,02	0,03	-0,13**	-0,02	0,23*	0,62*		-0,01	-0,16*	0,10***
EU	0.10***	0.47*	0.42*	-0.29***	-0.03	0.03	-0.04	-0,01		-0.06	0.13**
HH-INDEX	0.01	-0.24*	-0.25*	0.30*	0.64*	0.38*	-0.44*	-0,16*	-0.06		0.04
FEMALE	-0.11***	0.15*	0.05	-0.08	-0.01	0.12**	-0.02	0,10***	0.13**	0.04	

* Significant on 1%-level (two-tailed test)
** Significant on 5%-level (two-tailed test)
*** Significant on 10%-level (two-tailed test)

7.2 The results of the analyses

In the following page, the results of the four analyses are listed in table 7.2.

7.2.1 Estimated directions of influence

In models 1 and 2, the independent variable CENTRAL is analysed as six dummy variables; in models 3 and 4, CENTRAL is treated as a continuous variable. We see that this variable, describing a municipality's geographical location in terms of distance to nearest town, has a significant impact (on a 5% level of significance) on the size of the coalition formed only when treated as a continuous variable. When treated as a set of dummy variables, the dummies (with one, slightly deviant exception) have no significant impact on coalition formation. Even if not significant, however, the sign of each estimate shows the expected direction of the influence, again with one exception. There is a larger probability that oversized coalitions will be formed for municipalities located in category 1 than in category 3. For municipalities in categories 2, 4, 5, 6 and 7, there is less probability that oversized coalitions will be formed than in category 3-municipalities. The unexpected directional sign of category 2 should not be awarded to much weight. Only 5% of the municipalities belong to this category.

When we look at models 3 and 4, where centrality is treated as a continuous variable, the predicted direction of influence achieves support. The probability that oversized coalitions will be formed decreases significantly with increasing centrality.

Table 7.B *Estimated coefficients for influence on the probability that oversized mayoral coalitions will be formed; 4 different regression models (the estimates' standard deviations in parentheses). N = 318 municipalities*

	Model 1		Model 2		Model 3		Model 4	
SIZE	0.027		0.026		0.023		0.022	
	(0.017)		(0.017)		(0.016)		(0.015)	
CENTRAL					-0.141	**	-0.139	**
					(0.060)		(0.060)	
CENTRAL(1)	0.118		0.117					
	(0.501)		(0.501)					
CENTRAL(2)	-0.059		-0.132					
	(0.697)		(0.692)					
CENTRAL(4)	-0.797		-0.769					
	(0.636)		(0.637)					
CENTRAL(5)	-0.497		-0.518					
	(0.662)		(0.662)					
CENTRAL(6)	-1.079	***	-1.096	***				
	(0.591)		(0.591)					
CENTRAL(7)	-0.543		-0.534					
	(0.514)		(0.513)					
INCOME	-0.00001		0.00001		-0.00003		-0.00002	
	(0.0003)		(0.0003)		(0.0003)		(0.0003)	
ONEPARTY	1.432	**	1.343	**	1.392	**	1.297	**
	(0.567)		(0.530)		(0.559)		(0.553)	
BLOCKSOS	0.571				0.521			
	(0.422)				(0.417)			
BLOCKBOU	0.914	*			0.875	*		
	(0.336)				(0.332)			
NOBLOCK			0.824	**			0.784	**
			(0.320)				(0.317)	
EU	0.841	***	0.833	***	0.865	**	0.861	**
	(0.450)		(0.449)		(0.436)		(0.436)	
HH-INDEX	-0.759		-1.318		-1.358		-1.900	
	(2.395)		(2.302)		(2.298)		(2.216)	
FEMALE	-4.092	*	-4.194	*	-3.767	**	-3.887	**
	(1.582)		(1.575)		(1.566)		(1.550)	
INTERCEPT	1.106		1.308		1.505		1.689	***
	(1.039)		(1.010)		(1.029)		(1.007)	
c (model chi-square)	32.9	*	32.1	*	29.4	*	28.5	*
% cases correctly predicted	66.0		66.7		65.7		64.8	

* Significant on 1%-level (two-tailed test)
** Significant on 5%-level (two-tailed test)
*** Significant on 10%-level (two-tailed test)

Shaded areas mark the independent variables not included in the models.

If one party holds a majority of the seats in the municipal council alone, the probability that an oversized coalition will be formed when electing the mayor increases (5% significance level). I expected an opposite trend. However, a possible explanation for this result, which is also mentioned above, is that no one party controls the

membership of the coalition. No party can be denied voting for a mayoral candidate from another party. Reasons for voting for an other party's candidate can be to signal willingness to co-operate in the future; combined with a hesitation to behave purely demonstratively, when there is no hope of getting another candidate elected anyway. Based on the assumptions of the consensus-principle, the other parties may not want to increase the level of conflict for the coming four-year period. This result also indicates that it may be necessary to consider the coalition formation process *per se* more thoroughly. The process is not necessarily driven just by the parties being able to form a winning coalition; also less important parties show interest in joining coalitions. This result may thus stem from the fact that the coalitions observed in this study are informal ones.

I divided the municipal councils into three groups, depending on whether the socialistic parties, the bourgeois parties, or no party-block controlled a majority of the seats. The results from models 1 and 3 shows that the probability of oversized coalitions being formed increases significantly (1% level of significance) when there is a bourgeois majority in the municipal council, compared with when none of the blocks control the majority. The same tendency is observed for the socialistic parties when compared with the no-block municipal councils (however, this result is not significant). These results together indicate that block-thinking, to some degree, influences the coalition formation at local level too, as observed at national level (cf. Strøm 1990). The probability that an oversized coalition will be formed is significantly higher if there is a bourgeois majority than if none of the blocks hold the majority.[40]

[40] I also ran models, not reported here, with the socialist-controlled municipal councils as the reference category. The results were not significant. The signs of the estimated βs indicated, however, that the probability of oversized coalitions being formed increased if the majority was bourgeois-controlled, but decreased if neither of the blocks controlled the majority. This result should not be awarded too much weight, however, due to the simple fact that the maximum number of socialistic parties is three, and most often, only two of them are represented in the municipal council (SV and Ap). In contrast, there are five potential bourgeois coalition partners. Hence, the probability that an oversized socialist coalition will be formed is small.

Thus, there seems to be a higher degree of potential conflict between the blocks than within them. This is shown in models 2 and 4, where the variable NOBLOCK is substituted for BLOCKSOS and BLOCKBOU. Here, we observe what was indicated by models 1 and 3: there is a significant difference between municipal councils where one of the blocks holds the majority, and in councils where no block does. If none of the blocks controls the majority, the formation of oversized coalitions is less probable than if one of the blocks enjoys that control alone. Thus, bargainings across the borders between the blocks facilitates the formation of minimal coalitions, while making it harder for oversized coalitions to be formed.

In municipalities where a majority of the inhabitants voted «Yes» in the EU referendum, the probability that an oversized coalition will be formed when electing the mayor increases significantly, reported by all models (with varying levels of significance, though). In this respect, then, the conflictual level is lower than in the «No»-municipalities.

The share of women in the municipal council exerts a negative influence on the size of the coalitions formed: a higher percentage of female representatives makes the formation of oversized coalitions less probable. This may be because female representatives are not such an integrated part of the networks existing in the local political community. They may not be influenced as much as men by possibly existing norms for establishing consensus. Another explanation may be that this situation is an indication of modernity in the municipality: conflict dimensions - and thus party-based conflictual patterns - are perhaps more equivalent to the ones found at the national level.

Neither the number of inhabitants (SIZE) nor the wealth of the municipality (INCOME) show any significant influence on coalition formation. The directional sign of SIZE indicates that the probability of an oversized coalition being formed increases with

increasing number of inhabitants. This seems rather counter-intuitive. Assuming that oversized coalitions indicate a lower level of conflict, I expected that it would be more probable to find oversized coalitions in smaller municipalities. The wealth of the municipality (INCOME) does not have influence on coalition formation at all (as a matter of fact, the significance level is 91%). Coser's hypothesis seems to have no relevance in this context. The same is the case with party fragmentation: the variable HH-INDEX describing each municipal council's value on the Herfindahl-Hirschman index shows no significant influence on coalition formation. This indicates that party fragmentation, operationalised as the number of parties represented, combined with the share of seats each party holds, does not influence on the size of the coalitions formed.[41]

7.2.2 Goodness of fit

The 1% significance level values of the c-statistic for all the models shows that for each model, a null hypothesis that all coefficients except the intercept value are 0 can be rejected. The observed predictional successes of the models vary between 64.8% and 66.7%, implying that the improvement in relation to total random guesswork varies between 14.8% and 16.7%. However, as a tool for improving predictional ability beyond guesses based on the univariate frequency distribution, the models perform rather poorly. In the 318 municipalities analysed, oversized coalitions were observed in 60.1%, implying an increased predictional ability varying between 4.7% and 6.6%. Thus, our ability to make correct predictions about the size of the mayoral coalition formed increases slightly, but not impressingly so.

[41] This is not to say, however, that these variables are of irrelevance to the size of the coalitions being formed. I tested this by analysing several models, not reported here, where SIZE, INCOME or HH-INDEX were excluded, and models where combinations of them were left out. The number of inhabitants seemed to have significant influence (on a 10% level of significance) on the size of the coalition formed. When controlled for party-fragmentation and revenues, however, this effect disappeared. I also tested for interaction effects (of first order), but they were not found.

7.3 Concluding remarks

When analysing the quantitative multivariate models of relationships between the type of coalition formed and sets of independent variables, I have not tried to assess *strength* of influence of the independent variables on the dependent variable, only the *direction*. When logistic regression is applied as the tool of the analyses, an implicit assumption is that the effect of each independent variable, measured as its effect on the probability of the dependent variable having a certain outcome, varies with differing combinations of values for the other independent variables (Sørensen 1989:79). This assumption seems reasonable in the context of local politics, where a bundle of local factors apparently have influence on the coalitions formed. This is why I found it more interesting to merely observe the direction of influence of each of the independent variables on the dependent variable. Logistic regression is quite a «robust» tool, the direction of the estimated influence has a higher probability of remaining constant, despite changes in the values of the other independent variables.

Looking at table 7.2 as a whole, we observe that the signs for all the coefficients, with the exception of INCOME, remain unchanged in all the models applied. Two variables have a negative influence on the probability that oversized coalitions will be formed: CENTRAL and FEMALE. The more central the geographical location of a municipality, the lower the probability of an oversized coalition being formed; and the larger percentage of female representatives in the municipal council, the less chance of observing that an oversized coalition is formed. Three variables have a positive influence on the probability of oversized coalitions being formed: ONEPARTY, BLOCKBOU/NOBLOCK and EU. The probability of oversized coalitions being formed increases if a majority of the municipality's inhabitants voted «Yes» in the EU-referendum. It also increases if one party controls a majority of the representatives in the municipal council, or if there is a bourgeois controlled majority, seen in relation to municipal councils where no block holds a majority. The latter result indicates that, when bargaining across borders between blocks is necessary to form a winning

coalition, the climate hardens, and the formation of minimal coalitions becomes more likely.

The other variables tested in the models do not appear to have any significant influence on the coalition formation. The models perform in a similar way when the goodness-of-fit-statistics are studied. For all models, a null hypothesis stating that all the coefficients except for β_0 are 0 is rejected on a 1% significance level. Thus, the analyses show that variables other than just locally-based ones exist which influence municipal coalition formation. A reasonable interpretation could be that the results indicate a tradition of consensus-building but with a few exceptions due to the assumed influence of some kind of modernity and block-influence.

Secondly, the models make correct predictions regarding the size of about 66% of the mayoral coalitions observed. This implies an improvement of about 6% compared with the univariate frequency distribution when trying to predict whether a coalition will be minimal or oversized. This also implies, however, that much remains to be explained concerning municipal coalition formation.

8 Multivariate analysis: committee coalitions

In this chapter, I use the technique of logistic regression to analyse models that try to predict the size of the committee coalitions formed. I apply the same method and use the same models as for mayoral coalitions in the previous chapter, to see whether the independent variables affect the dependent variable differently when this is operationalised as committee coalitions. The concept of committee coalitions has been defined and discussed earlier; the operationalisations are not changed. For a description of the models and their independent variables, see chapter 7.

The models employed to estimate the probability that a committee coalition will be oversized, are the following:

Model 1: $L = \beta_0 + \beta_1 \text{SIZE} + D_1\text{CENTRAL}(1) + D_2\text{CENTRAL}(2) + D_4\text{CENTRAL}(4) + D_5\text{CENTRAL}(5) + D_6\text{CENTRAL}(6) + D_7\text{CENTRAL}(7) + \beta_2\text{INCOME} + \beta_3\text{ONEPARTY} + D_8\text{BLOCKSOS} + D_9\text{BLOCKBOU} + \beta_4\text{EU} + \beta_5\text{HH-INDEX} + \beta_6\text{FEMALE},$

Model 2: $L = \beta_0 + \beta_1 \text{SIZE} + D_1\text{CENTRAL}(1) + D_2\text{CENTRAL}(2) + D_4\text{CENTRAL}(4) + D_5\text{CENTRAL}(5) + D_6\text{CENTRAL}(6) + D_7\text{CENTRAL}(7) + \beta_2\text{INCOME} + \beta_3\text{ONEPARTY} + \beta_5\text{NOBLOCK} + \beta_6\text{EU} + \beta_7\text{HH-INDEX} + \beta_8\text{FEMALE},$

Model 3: $L = \beta_0 + \beta_1 \text{SIZE} + \beta_2\text{CENTRAL} + \beta_3\text{INCOME} + \beta_4\text{ONEPARTY} + D_1\text{BLOCKSOS} + D_2\text{BLOCKBOU} + \beta_5\text{EU} + \beta_6\text{HH-INDEX} + \beta_7\text{FEMALE},$

Model 4 $L = \beta_0 + \beta_1 \text{SIZE} + \beta_2\text{CENTRAL} + \beta_3\text{INCOME} + \beta_4\text{ONEPARTY} + \beta_5\text{NOBLOCK} + \beta_6\text{EU} + \beta_7\text{HH-INDEX} + \beta_8\text{FEMALE},$

where, for all models, D denotes the coefficient associated with each of the dummy variables; and $L = \ln\left(\frac{P(COALTYPE = 1)}{1 - P(COALTYPE = 1)}\right)$.

Chapter 7 contains a discussion on whether the regression assumptions are met or not. The general principles on which the models are based are presented there.
The data-sets used differ from that used for analysing mayoral coalitions. Appendix 3 contains simple, descriptive statistics for each of the variables based on total committee coalitions and reduced committee coalitions, respectively. There is variation across every independent variable.

There must not be perfect or near perfect correlation between the independent variables. The correlations between all the variables are shown in tables 8.1 and 8.2. The six dummy variables describing centrality are not included in the correlation matrix. They are adequately represented by CENTRAL. In neither table does multicollinearity occur between the variables, there are no correlation values above 0,80, which is normally considered to be the limit for such a test. Hence, it is safe to proceed with the analysis.

Table 8.A *Correlations between all the variables in the models applied in the quantitative multivariate analyses, treating total committee coalitions as dependent variable (Person correlation coefficients,* r*). N= 383*

	COAL-TYPE	SIZE	CENT-RAL	INCOME	ONE-PARTY	BLOCK-SOS	BLOCK-BOU	NOBLOCK	EU	HH-INDEX	FEMALE
COALTYPE		0.02	0.02	-0.02	0.07	-0.06	0.00	-0.06	0.04	-0.01	-0.01
SIZE	0.02		0.35*	-0.28*	-0.10***	-0.02	0.06	0.05	0.51*	-0.22	0.12**
CENTRAL	0.02	0.35*		-0.48*	-0.08	-0.02	0.08	0.08	0.43*	-0.25*	0.05
INCOME	-0.02	-0.28*	-0.48*		0.11**	-0.04	-0.10**	-0.16*	-0.30*	0.29*	-0.07
ONEPARTY	0.07	-0.10***	-0.08	0.11**		0.39*	-0.35*	-0.05	-0.02	0.64*	-0.00
BLOCKSOS	-0.06	-0.02	-0.02	-0.04	0.39*		-60.8*	0.22*	0.05	0.36*	0.10***
BLOCKBOU	0.00	0.06	0.08	-0.10**	-0.35*	-60.8*		0.64*	-0.02	-0.41*	0.00
NOBLOCK	-0.06	0.05	0.08	-0.16*	-0.05	0.22*	0.64*		0.03	-0.16*	0.09***
EU	0.04	0.51*	0.43*	-0.30*	-0.02	0.05	-0.02	0.03		-0.09***	0.13*
HH-INDEX	-0.01	-0.22*	-0.25*	0.29*	0.64*	0.36*	-0.41*	-0.16*	-0.09***		0.05
FEMALE	-0.01	0.12**	0.05	-0.07	-0.00	0.10***	0.00	0.09***	0.13*	0.05	

* Significant on 1%-level (two-tailed test)
** Significant on 5%-level (two-tailed test)
*** Significant on 10%-level (two-tailed test)

Table 8.B *Correlations between all the variables in the models applied in the quantitative multivariate analyses, treating reduced committee coalitions as dependent variable (Person correlation coefficients,* r*). N= 408*

	COAL-TYPE	SIZE	CENT-RAL	INCOME	ONE-PARTY	BLOCK-SOS	BLOCK-BOU	NOBLOCK	EU	HH-INDEX	FEMALE
COALTYPE		0.10***	0.08***	-0.07	0.09***	0.07	-0.14*	-0.09***	0.15*	0.01	0.04
SIZE	0.10***		0.35*	-0.29*	-0.10**	-0.03	0.07	0.05	0.51*	-0.21*	0.12**
CENTRAL	0.08***	0.35*		-0.49*	-0.11**	-0.05	0.09***	0.07	0.44*	-0.26*	0.0
INCOME	-0.07	-0.29*	-0.49*		0.14*	-0.02	-0.12**	-0.17*	-0.30*	0.36*	-0.07
ONEPARTY	0.09***	-0.10**	-0.11**	0.14*		0.41*	-0.35*	-0.03	-0.04	0.64*	-0.01
BLOCKSOS	0.07	-0.03	-0.05	-0.02	0.41*		-0.62*	0.24*	0.02	0.34*	0.10**
BLOCKBOU	-0.14*	0.07	0.09***	-0.12**	-0.35*	-0.62*		0.62*	-0.00	-0.41*	-0.02
NOBLOCK	-0.09***	0.05	0.07	-0.17*	-0.03	0.24*	0.62*		0.02	-0.16*	0.08
EU	0.15*	0.51*	0.44*	-0.30*	-0.04	0.02	-0.00	0.02		-0.10***	0.13**
HH-INDEX	0.01	-0.21*	-0.26*	0.36*	0.64*	0.34*	-0.41*	-0.16*	-0.10***		0.05
FEMALE	0.04	0.12**	0.04	-0.07	-0.01	0.10**	-0.02	-0.08	0.13**	0.05	

* Significant on 1%-level (two-tailed test)
** Significant on 5%-level (two-tailed test)
*** Significant on 10%-level (two-tailed test)

8.1 The analyses with total committee coalitions as dependent variable

The results of four analyses treating total committee coalitions as dependent variable are listed in table 8.3. I run the same four models as used to predict the size of the mayoral coalitions being formed.

The results emerging from the logistic regression analyses on the size of the total committee coalitions should be interpreted with caution. The models' high percentage of correctly predicted cases is almost completely due to their predicting about 95% of the coalitions as oversized. Certainly, they perform well compared with predictions based purely on random guesswork (which assign a .50/.50 distribution of probability). However, when compared with predictions based on the univariate frequency distribution, the performance is rather poor. In the 383 municipalities, 77.5% are observed to be oversized. The models, then, improve predictional ability by about 1.5%. Thus, if the only goal is to predict, using a model to estimate the probability of total committee coalitions being formed is hardly worth the effort.

Table 8.C *Estimated coefficients for influence on the probability that oversized total committee coalitions will be formed; 4 different regression models (the estimates' standard deviations in parentheses). N = 383 municipalities*

	Model 1		Model 2		Model 3		Model 4	
SIZE	0.025		0.021		0.021		0.017	
	(0.017)		(0.015)		(0.015)		(0.013)	
CENTRAL					-0.006		0.002	
					(0.066)		(0.064)	
CENTRAL(1)	0.207		0.024					
	(0.546)		(0.537)					
CENTRAL(2)	1.537	***	0.949					
	(0.926)		(0.888)					
CENTRAL(4)	0.453		0.368					
	(0.708)		(0.695)					
CENTRAL(5)	-0.402		-0.563					
	(0.716)		(0.597)					
CENTRAL(6)	-0.350		-0.648					
	(0.614)		(0.697)					
CENTRAL(7)	0.506		0.358					
	(0.570)		(0.561)					
INCOME	0.0005		0.0006		0.0004		0.0006	
	(0.0004)		(0.0004)		(0.0004)		(0.0004)	
ONEPARTY	1.241	**	0.677		1.082	**	0.642	
	(0.559)		(0.527)		(0.535)		(0.515)	
BLOCKSOS	-0.857	**			-0.782	***		
	(0.423)				(0.401)			
BLOCKBOU	0.747	**			0.709	**		
	(0.349)				(0.342)			
NOBLOCK			0.293				0.261	
			(0.329)				(0.322)	
EU	-1.049	**	-1.030	**	-1.057	**	-1.046	**
	(0.465)		(0.446)		(0.436)		(0.421)	
HH-INDEX	-3.617		-5.924	**	-3.708		-5.988	**
	(2.628)		(2.451)		(2.541)		(2.377)	
FEMALE	-1.321		-1.656		-1.101		-1.387	
	(1.650)		(1.611)		(1.644)		(1.594)	
INTERCEPT	1.215		2.047	***	1.546		2.126	**
	(1.095)		(1.050)		(1.115)		(1.075)	
c (model chi-square)	46.9	*	28.8	*	37.9	*	20.3	*
% cases correctly predicted	78.9		78.9		78.6		78.9	

* Significant on 1%-level (two-tailed test)
** Significant on 5%-level (two-tailed test)
*** Significant on 10%-level (two-tailed test)

Shaded areas mark the independent variables not included in the models.

Some comments can be made, but it should be remembered that they regard weak tendencies in the data material. There is no effect stemming from the different operationalisations of CENTRAL. How the «party-block variable» is operationalised seems to matter somewhat. The party-related variables' level of significance are

approximately equal for models 1 and 3, and for models 2 and 4. This indicates that «revealing» the demarcation line between the socialist and the bourgeois block by using BLOCKSOS and BLOCKBOU also reveals indications of some block-related preferences, which possibly influence the size of the coalitions being formed.

We see from models 1 and 3 that the probability of oversized committee coalitions being formed increases when the bourgeois block is in control, but decreases when the socialistic parties are. Thus, some indications of «block-thinking» are found. This effect is somewhat stronger than of mayoral coalitions. Finally, we note that the level of significance of impact of one party controlling the majority of the representatives in the municipal council varies considerably, depending on the operationalisation of the «party-block variables»: in models 2 and 4, there is no significant impact of one party controlling a majority of the representatives alone on the probability that oversized coalitions will be formed.

From models 2 and 4, The Herfindahl-Hirschman index of fragmentation (HH-INDEX) is observed to have a significant influence on the size of the total committee coalitions formed: the more fragmented the municipal council, the higher probability that an oversized coalition will be formed. This influence became significant when municipalities where a socialistic block or a bourgeois block controlled the majority were classified in one category, and compared with municipalities where no block holds a majority of the seats. HH-INDEX is positively correlated with BLOCKSOS and negatively with BLOCKBOU, while it is negatively correlated with NOBLOCK. In other words, the degree of fragmentation is larger when the bourgeois parties control a majority of the seats in the municipal council, or when none of the blocks do so. This is reasonable: there simply are more bourgeois parties. Thus, the (insignificant) negative impact of fragmentation on coalition size is probably due to the impact of block-partition in some of the municipalities: more parties that are willing to bargain,

that is, more parties within a block, increase the possibility of an oversized coalition being formed.

The one variable observed to have a significant influence on coalition size in all the models is the EU-variable. Interestingly, the influence is negative in regard to total committee coalitions, in contrast to the positive influence on the size of mayoral coalitions. In other words, if a majority of the inhabitants in a municipality voted «Yes» in the EU-referendum of 1994, the probability of an oversized total committee coalition being formed in 1995 decreases, compared with municipalities where they voted «No». The parties controlling the chairs in «Yes»-municipalities signal less willingness to co-operate with the «opposition» parties. How can this be explained?

From table 8.1 of correlations, we see that the EU-variable is correlated positively with SIZE, CENTRAL and FEMALE, and negatively with INCOME. Large and geographically central municipalities with a large percentage of female representatives may reflect a more «modern» nationally inspired attitude towards politics than found in other municipalities. Thus, the EU-vote possibly indicates a combined effect of these factors.

8.2 The analyses with reduced committee coalitions as dependent variable

The results of four analyses treating reduced committee coalitions as dependent variable are listed in table 8.4. Again, I run the same four models as used to analyse mayoral coalitions and total committee coalitions, to find the best possible model to predict the probability that oversized reduced committee coalitions will be formed.

Table 8.D *Estimated coefficients for influence on the probability that oversized reduced committee coalitions will be formed; 4 different regression models (the estimates' standard deviations in parentheses). N = 408 municipalities*

	Model 1		Model 2		Model 3		Model 4	
SIZE	0.002		0.001		0.002		0.001	
	(0.007)		(0.007)		(0.007)		(0.007)	
CENTRAL					-0.048		-0.038	
					(0.052)		(0.051)	
CENTRAL(1)	-0.193		-0.305					
	(0.428)		(0.423)					
CENTRAL(2)	0.433		0.031					
	(0.617)		(0.585)					
CENTRAL(4)	0.370		0.306					
	(0.558)		(0.548)					
CENTRAL(5)	-0.149		-0.351					
	(0.632)		(0.612)					
CENTRAL(6)	-0.589		-0.777					
	(0.512)		(0.500)					
CENTRAL(7)	-0.435		-0.474					
	(0.443)		(0.437)					
INCOME	0.0003		0.0003		0.0002		0.0003	
	(0.0003)		(0.0003)		(0.0003)		(0.0003)	
ONEPARTY	1.002	**	0.471		1.052	**	0.523	
	(0.463)		(0.424)		(0.451)		(0.417)	
BLOCKSOS	-0.725	***			-0.703	***		
	(0.379)				(0.372)			
BLOCKBOU	0.834	*			0.831	*		
	(0.284)				(0.282)			
NOBLOCK			0.451	***			0.446	***
			(0.270)				(0.269)	
EU	-0.559		-0.552		-0.712	***	-0.704	***
	(0.394)		(0.382)		(0.383)		(0.371)	
HH-INDEX	-4.331	**	-6.015	*	-4.505	**	-6.241	*
	(1.939)		(1.970)		(1.904)		(1.934)	
FEMALE	0.043		-0.384		-0.037		-0.482	
	(1.345)		(1.308)		(1.336)		(1.293)	
INTERCEPT	0.651		1.315		0.753		1.269	
	(0.813)		(0.809)		(0.830)		(0.830)	
c (model chi-square)	54.9	*	31.6	*	49.9	*	26.3	*
% cases correctly predicted	67.2		63.0		65.4		58.8	

* Significant on 1%-level (two-tailed test)
** Significant on 5%-level (two-tailed test)
*** Significant on 10%-level (two-tailed test)

Shaded areas mark the independent variables not included in the models.

For reduced committee coalitions, the percentage of correctly predicted cases is on average lower for all the models. This does not mean, however, that the models predicting the size of reduced committee coalitions perform less well. On the contrary, compared with the univariate frequency distribution, the improvement in predictional

ability is higher than for both mayoral and total committee coalitions. In the 408 municipalities, 53.7% of the coalitions were observed to be oversized. The models' improvement varies between 13.5% (model 1) and 5.1% (model 4). Thus, unlike in the case of total committee coalitions, it is not necessarily worthless to estimate the probability that oversized coalitions will be formed.

With the exception of the influence of the EU-variable, there is no observed differences stemming from the different operationalisations of centrality. The operationalisation of the «party-block variables» seems to matter, however. The influence of the party block variables is strong in models 1 and 3, also when applied to reduced committee coalitions. In addition to the separate influences in municipalities where either a socialistic or a bourgeois block controls a majority of the representatives, the NOBLOCK variable exhibits positive influence on the size of the coalitions formed in models 2 and 4. The direction of these influences remains stable. The drop in predictional ability when substituting BLOCKSOS and BLOCKBOU by NOBLOCK indicates, however, that an effect on the size of the coalitions formed exists beyond the one observed when one or other block controls a majority: if the block is socialist, the probability that oversized reduced committee coalitions will be formed decreases, but increases when a bourgeois block is in control.

We also see a significant influence of the HH-INDEX in all the models. The probability for oversized reduced committee coalitions being formed increases when the fragmentation increase in the municipal council. This indicates some support to the assumption of consensuality.

8.3 Predicting coalition size: the influential variables

In this section, I briefly compare the results stemming from the analyses of the committee coalitions made above with the observations made when analysing mayoral coalitions. However, some reservations have to be made. First, we must remember that

the different dependent variables analysed differ radically from one another. The mayoral coalitions are weak and informal, and are based on records on which parties voted in favour for the candidate elected as mayor. In contrast, the «committee coalition» is an analytically constructed term - no such formal group exists in the municipal councils. These coalitions are stronger, but nevertheless informal, and more important in this context: they emerge as a result of a number of separate votes. We do not know whether the different chairs received votes from the same parties. What is assumed is that some form of concerted action ensures that the chairs are distributed between a group of parties, as agreed upon prior to the elections. Further, there is the difference between the total committee coalitions and the reduced committee coalitions, where the former includes the chair of the control committee. This distinction was made because of the assumed existence of a norm for giving the control committee chair to the «opposition», and because the control committees are assumed to be less important than the other standing committees. In that case, the reduced committee coalition would be an indication of the «actual» coalition in the municipality. Last, but not least, the committee coalitions do not include the parties that control only one or more of the vice-chairs of the standing committees. Thus, the percentage of oversized committee coalitions observed is lower than would have been the case if these parties were to be included.[42]

When interpreting the results of the quantitative analyses, I have focused on the coefficients' sign (of estimated influence) and their level of significance. In table 8.5, I have tried to summarise the results stemming from all the models with each of the three data-sets as basis for the dependent variable. In other words, the table summarises the influence of each of the independent variables on the probability that oversized coalitions will be formed, controlled for the other variables. Only significant observations (10% level of significance or better) are reported.

[42] Strictly speaking, the observed percentage is equal to or lower than would have been the case if the vice-chairs' party affiliation were included. However, it is improbable that there is not at least one municipality where

Table 8.E *Comparing direction and significance for all the estimated coefficients on the probability that oversized coalitions will form, tested in models 1 - 4, with mayoral coalitions, total committee coalitions and reduced committee coalitions as basis for the dependent variable. Based on tables 7.2, 8.3 and 8.4. N_{MC} = 318 municipalities; N_{TCC} = 383 municipalities; N_{RCC} = 408 municipalities*

	Model 1			Model 2			Model 3			Model 4		
	MC	TCC	RCC	MC	TCC	RCC	MC	TCC	RCC	MC	TCC	RCC
SIZE												
CENTRAL							÷÷			÷÷		
CENTRAL(1)												
CENTRAL(2)		+++										
CENTRAL(4)												
CENTRAL(5)												
CENTRAL(6)	÷÷÷			÷÷÷								
CENTRAL(7)												
INCOME												
ONEPARTY	++	++	++	++			++	++	++	++		
BLOCKSOS		÷÷	÷÷÷					÷÷	÷÷÷			
BLOCKBOU	+	++	+				+	++	+			
NOBLOCK				++		+++				++		+++
EU	+++	÷÷		+++	÷÷		++	÷÷	÷÷÷	++	÷÷	÷÷÷
HH-INDEX			÷÷		÷÷	÷			÷÷		÷÷	÷
FEMALE	÷			÷			÷÷			÷÷		
INTERCEPT					+++					+++	++	

MC = Mayoral Coalitions
TCC = Total Committee Coalitions
RCC = Reduced Committee Coalitions

Shaded areas mark the independent variables not included in the models.

\+ Coefficient positive, significant on 1%-level
++ Coefficient positive, significant on 5%-level
+++ Coefficient positive, significant on 10%-level

÷ Coefficient negative, significant on 1%-level
÷÷ Coefficient negative, significant on 5%-level
÷÷÷ Coefficient negative, significant on 10%-level

The way the variable describing whether a socialist block, a bourgeois block or none of them controls a majority of the representatives in the municipal council is operationalised, influences some of the results of the models. The variable ONEPARTY has a significant, positive influence on the probability that oversized coalitions will form, regardless of whether they are mayoral or committee coalitions, when BLOCKSOS and BLOCKBOU are included in the models. Two variables are shown to

a party controls one or more of the vice-chairs without controlling the mayor, the vice-mayor or any of the chairs.

have a relatively stable impact on the size of the coalitions formed, regardless of whether they are mayoral or committee coalitions. The first is ONEPARTY: the probability that oversized coalitions will be formed increases when one party controls a majority of the seats in the municipality. Other parties support the mayor, and other parties are to some degree included in the committee coalitions. There is no evidence of a difference between reduced and total committee coalitions. This result seems to indicate the existence of a norm of consensus and proportionality in the municipal councils. When the dummies are substituted with NOBLOCK in models 2 and 4, however, the effect remains significant for mayoral coalitions only. An explanation may be that the block-effect is varying with which block that is in control. In other words, there are differences between socialistic and bourgeoisely controlled municipal councils as regards the probability that oversized committee coalitions will form.

Also BLOCKBOU is seen to have positive influence on the probability of oversized coalitions being formed, whenever this variable is included in the models. This partly opposes the view of a low level of impact of national block partition in local politics. If parties inside one of the blocks control a majority of the representatives in the municipal council, they limit the membership of the coalition to the parties included in their own block.

The interpretation of the impact of the other block-related variables is somewhat more open to discussion. If the socialist parties control the majority, the probability of an oversized *committee* coalition being formed decreases, i.e., they achieve control of the important political positions themselves. We find no significant impact on mayoral coalitions, but the direction of the influence is nevertheless the opposite, implying an increase in the probability that the mayor will be supported by an oversized coalition. From the variable NOBLOCK, we observe that the «oversized»-probability increases when one of the blocks controls a majority. That goes for mayoral coalitions and reduced committee coalitions. Again, these «party block»-variables can be interpreted

as indicating, to varying degrees, that party blocks do have some influence: parties within a block strive to establish a coalition on their own, before establishing cross-block coalitions. The difference between the socialistic and the bourgeois blocks is the number of parties within each of them: a larger number of bourgeois parties increase the probability for larger coalitions to form. With regard to the mayoral coalitions, the missing effect of BLOCKSOS might be explained by the not-exclusive possibility of controlling membership of the coalitions. We also note that NOBLOCK has a positive influence on the mayoral and on the reduced committee coalitions, but not on the total committee coalitions. This may indicate that the assumed block-effect is weakened by the apparently less important status of the chair of the control committee.

The impact of the EU-variable is worth noting: the coefficient is positive when applied to mayoral coalitions, negative when applied to committee coalitions. Again, this may be an indication of the difference between the sets of coalitions: when electing the mayor, the symbolic and uniting aspects are stressed to a larger degree than when putting together the committee coalitions. Conflicts between parties, rooted in the EU campaign, did perhaps still influence the political climate one year later.

The significance of the rest of the coefficients apparently varies with the coalition set analysed. SIZE has some positive influence on the mayoral coalitions formed, and also on the total committee coalitions in model 4. However, this effect is not significant when controlled for other variables. Nevertheless, this partly opposes the «common-sense» view of there being a higher probability of consensus-based coalition building in smaller municipalities. It rather indicates that a norm for consensus-building exists regardless of size of the municipality.

When treated as a continuous variable, geographical centrality clearly has influence on the size of the mayoral coalitions formed, but has no impact on the committee coalitions. This goes for the percentage of female representatives in the municipal

council too. On the other hand, the degree of party fragmentation - HH-INDEX - impacts negatively on committee coalitions (especially on reduced ones), but not (significantly) on mayoral coalitions.

As stated several times before, the estimated coefficients must be interpreted with caution, because of the many assumptions necessary for developing them. The large amount of oversized coalitions among the committee coalitions makes the interpretations more uncertain. Further, there is the difference in improvement in predictional ability compared with the univariate frequency distributions. In general, the models predicting the size of the reduced committee coalitions performs better than when applied to mayoral or total committee coalitions. The performance when applied to total committee coalitions is rather poor.

Nevertheless, some of the results seem to point in the same direction(s), thereby making it possible to suggest some interpretations of the conflictual level in the municipalities. A central concept might be «modernity», which is rather vague. The negative effect of CENTRAL and FEMALE on oversized mayoral coalitions may be an indication of a more politicised climate in connection with also the election of the mayor in these municipalities. I have suggested that the EU-variable indicates the same for oversized committee coalitions. The difference in influence on the different coalition types (mayoral vs. committee) may be due to their being «constituted» on differing grounds. With regard to the EU-matter, the mayor may serve a special function as a uniting figure. A similar argument can be put forward in respect of the «party block»-variables: if none of the blocks controls the majority, the bargainings become tougher, and the probability of oversized coalitions being formed decreases. The differences observed when a socialistic block controls the majority are probably due to the difference with regard to the basis of the coalitions: when the mayor is elected, the socialistic block gets their candidate in anyway, and others may vote for this candidate to signal willingness to co-operate etc. When the probability of an

oversized committee coalition being formed decreases with a socialistic majority, this probably reflects of the fact that the socialistic parties are fewer in number. To some degree, then, the national partition into party blocks appears to have some influence on the coalition formation at local level as well as at national level.

9 Conclusion

In this thesis, I set out to describe and predict coalition formation in Norwegian municipalities, on the basis of data from most of the municipalities. Thus, I was able to make statistically valid and reliable observations and estimations. I operationalised coalitions in two ways: as the group of parties observed to vote in favour of the candidate elected as mayor (mayoral coalitions); and as the coalitions consisting of the parties controlling the mayor, the vice-mayor and the leaders of the important standing committees (committee coalitions). The committee coalitions were operationalised in two ways: total committee coalitions, including all the leaders of the committees, and reduced committee coalitions, where the party controlling the chair of the control committee was excluded from the group.

Before summarising the results, some reservations should be made. The mayoral coalition is an input in the political process of electing the mayor, the committee coalitions is the result of action, and is thus a kind of output. Hence, they represent two different stages of the process(es) of election. Further, the most important assumption concerning committee coalitions, which has not been tested, is whether the same parties voted together in all the separate elections of the chairs. In the case of mayoral coalitions, this assumption is obviously unnecessary to make. Here we have mapped the group that acted together, the committee coalitions emerge as the result of some parties acting together. Nevertheless, it seems to be usual to have a lot of bargaining in the municipal councils before they are constituted, making it less probable that the distribution of the important chairs is coincidental. An other assumption concerns the definition of important chairs, that is, what are the important political positions to be bargained about? I have not had access to nation-wide data on the party affiliation of the vice-leaders of the different committees. These may also to some degree be the

subject of bargaining. These reservations should be remembered when making conclusions.

First, I analysed the different operationalisations using the classical coalition theories that have been earlier applied with varying degrees of success at the national level. The tests revealed that the phenomenon of oversized coalitions was the type of coalition most often observed. That goes for mayoral coalitions and both types of committee coalitions. With regard to the classical theories, Riker's predictions were more successful than Axelrod's. About 40% of the mayoral coalitions turned out to be minimal winning, corresponding to observations at the national level (Laver and Schofield 1990:96). This is an indication of that percentage being rather stable, regardless of organisational level (national or local) and organisational principle (parliamentarian or Board of Aldermen). The percentage of minimal winning committee coalitions was clearly lower, but nevertheless larger than the percentage of minimal connected winning coalitions. This indicates that Axelrod's theory is not applicable to Norwegian municipalities. This does not falsify Axelrod's theory; it is rather an indication of the non-dominant status of the socio-economic dimension in Norwegian municipalities. There does not seem to be any single nation-wide dominant conflict dimension in the municipalities. In order to test Axelrod's theory properly on the municipal level, we would have to identify possible conflict dimensions in every municipality. The view of office as being more important than policy is certainly not diminished.

The differences between total and reduced committee coalitions as regards the percentage of minimal winning coalitions also indicates that the role of the control committee is, to some degree, as indicated before: it has restricted importance, and is often given to the «opposition».

The large number of oversized coalitions observed is clearly the most important feature found when testing the classical theories. When using mayoral coalitions to test the classical theories, the results seem to support the view that local politics in Norway are, above all, consensus-oriented. This may be due to local-specific variables and the personal characteristics of the candidates. It may also be due to the actors being rational in the long term, trying to collect support for the four-year period to come. This impression was strengthened when the predictions concerning the probability of oversized coalitions being formed were subjected to quantitative, multivariate tests.

Two variables were observed to have significant influence on the probability that oversized coalitions would be formed: if one party controls a majority of the representatives on its own, the probability increases that the coalition formed will be oversized. In the case of mayoral coalitions, this can be explained by the fact that they are informal. The committee coalitions show that other factors are involved too: it is more probable that the majority party will let other parties control some of the chairs, than that it will seize all the chairs for itself. This indicates a climate for coalitions built on consensus in the municipalities. Further, it is observed that oversized coalitions are more probable when the bourgeois parties control a majority of the representatives in the municipal council. Thus, some patterns of the block-partition found at the national level are observed at local level as well.

The differences between the mayoral and the committee coalitions are somewhat harder to explain. First, the degree of geographical centrality of a municipality, treated as a continuous variable, has a negative influence on the probability of oversized mayoral coalitions being formed: the lower degree of centrality, the higher the probability of finding an oversized coalition. Second, the percentage of female representatives in the municipal council has a negative influence too, suggesting that more women in municipal council implies a smaller probability of oversized mayoral coalitions being formed. None of these variables has a significant influence on the

predicted size of the committee coalitions. A possible explanation is that the election of the mayor is a more politicised issue in the more «modern» municipalities, increasing the level of conflict connected with it. What concerns the committee coalitions, the norm of consensus and proportional representation probably influence the coalition formation to a stronger degree than the level of «modernity» does, making the influence of these variables rather insignificant.

The interpretation of the EU variable - whether a majority of the inhabitants voted «Yes» or «No» in the EU referendum in 1994, is also difficult to interpret. If the majority voted «Yes», the probability increases that an oversized mayoral coalition will be formed, while the probability of an oversized committee coalition decreases. As mentioned above, I find a reasonable interpretation to be that there are major differences between the type of coalitions and the way these represent the conflictual climate. It is interesting to note that there are no significant differences between smaller and larger municipalities, as regards the probability of oversized coalitions being formed.

The most important finding in this thesis, then, is that the probability of oversized coalitions being formed in Norwegian municipalities is high, regardless of whether this is connected with electing the mayor or with electing the leaders of the different standing committees. This strengthens the view of Norwegian local politics as being heavily influenced by norms of consensuality and proportional representation, contributing to the formation of what can be coined *consensual coalitions*. This influence is perhaps somewhat weaker in some municipalities that may be considered as being on a higher level of «modernity» than others, but not much weaker. It is also modified somewhat by the influence of the traditional block-partition at national level.

Thus, unlike at national level, the formation of oversized coalitions at municipal level seems to be a norm, and various types of minimal coalitions can be regarded as

deviations from this norm. However, this thesis also shows that more analyses of municipal coalition formation are needed.

The picture drawn in this thesis is based on data from one point in time. There seems to be an urgent need for data from several points in time. If data are collected every 4th year, after the municipal elections, time series data can be established. On the basis of these data, models can be produced to chart changes in coalition patterns over time. For instance, effects of one of the intentions behind the Local Government Act - to get local politics to be more politicised - may need time to become manifested. After the election in 1999, effects may be found.

Other types of analyses should also be considered. First, one should try to gather data on the «actual» coalitions in the municipalities by mapping whether any formal agreements on co-operation exist between any of the parties. This can be done quantitatively for all Norwegian municipalities. Further, there is a distinct need of more detail-specific data, viz., data from a large number of votings in the municipal councils. Then, any conflict dimensions could be identified in a much more reliable way than was possible here. It would then be possible to identify motivational factors when the issues at stake are not connected to electing persons to important political positions. This would also provide a possibility of applying theories based on policy distance, which would greatly extend the number of testable theories. Such data are available in a few municipalities.

One way to identify interesting cases for more intensive studies is to find the municipalities where formal agreements exist. Another way is to find the municipalities where the mayoral and the committee coalitions consist of identical combinations of parties. In tests not reported in this thesis, I observed this in a small number (between 3% and 10%) of the municipalities. The pattern of co-operation

observed here may be more stable than in the rest of the municipalities, and other findings could be expected.

Within the tradition of neo-institutionalism, it would obviously be interesting to test the assumed very high importance of the board of aldermen model on the climate for coalition formation. The Local Government Act allows all municipalities to organise themselves by the parliamentarian principle, if they wish. Today, Oslo is the only municipality that has done so. Thus, comparative studies within Norway on a broad, statistical basis to find effects from the two different principles of organisation are today impossible. However, reproducing the analyses from this thesis in other countries could provide interesting observations.

Further, a wider spectre of newer coalition theories should be applied to municipal coalitions. Often, then, a more thorough analysis of each municipality is required, but in return, it will be possible to take into account the importance of strictly locally determined factors, which cannot be captured by general models. This could be the presence of a very popular mayoral candidate, the existence of a specific local conflict dimensions, etc. Future research should try to incorporate the above aspects when modelling local coalition formation, and if possible apply a dynamic approach, in contrast to the static approach I have applied here. Median-party based theory is also an approach which might produce interesting results. A first step, however, could be to include theories taking into account that the actor’s also look to the next election to come, and that they want to maximise the number of votes they receive then. For instance, in a local context, a dilemma may exist between living up to the praised values of consensus-based behaviour on the one side, and forming a clear-cut profile, recognisable to the voters, on the others. This, and related issues, being frequently explored at national level, certainly deserve some attention at local level as well.

Appendix 1: list of parties and abbreviated party names

English name	Norwegian name	Norwegian abbreviation
The Norwegian Labour Party	Det Norske Arbeiderparti	Ap
The Progress Party	Fremskrittspartiet	Frp
The Conservative Party	Høyre	H
The Christian People's Party	Kristelig Folkeparti	KrF
The Pensioners' Party	Pensjonistpartiet	Pp
The Red Voters' Alliance	Rød Valgallianse	RV
The Centre Party	Senterpartiet	Sp
The Socialist Left Party	Sosialistisk Venstreparti	SV
The Liberal Party	Venstre	V
(Joint list)	Fellesliste	
(Local list)	Lokal liste	
(Other list)	(Annen liste)	

Appendix 2: the logistic regression method[43]

The logistic regression method is a multivariate technique for estimating the probability of an event occurring when this event is operationalised as a dichotomous dependent variable (Aldrich and Nelson 1984). The assumptions necessary for hypothesis testing in ordinary regression analysis are necessarily violated when the dependent variable can take two values only. The logistic regression model requires far fewer assumptions than discriminant analysis.

In ordinary regression models, the parameters are estimated by the method of Least Squares Estimation (LSE), which seeks to minimise the sum of squared errors between

[43] Often, the terms «logistic regression» and «logit» are used interchangeably. Formally, there is a difference between them. The logistic model denotes a model where the independent variables are discrete, while logistic

the model and the data. In contrast, logit parameters are estimated by the method of Maximum Likelihood Estimation (MLE), which is concerned with picking parameter estimates that result in the highest probability of having obtained the observed sample Y (Aldrich and Nelson 1984:49-51).

When applying ordinary regression on models with a dichotomous dependent variable, unreasonable probability values (P) may be the result, that is, $P < 0$ or $P > 1$ (Sørensen 1989). That goes both for ordinary least squares method (OLS) and weighted least squares method (WLS). WLS is a two-step method. In the first step, predicted probabilities (P) are estimated by ordinary regression. Thereafter, the observations of are weighted. Both the dependent and the independent variables are weighted (i.e., multiplied) by a factor w defined by $w = \sqrt{\frac{1}{P(1-P)}}$ (Sørensen 1989:64-65).

However, it must be asked whether the implicit assumption of linearity is realistic even for those combinations of values on the independent variables resulting in P-values between 0 and 1 (Sørensen 1989:66-67). A reasonable assumption may be that the regression curve not is linear, but S-shaped, which means that the change in P-values per-unit change in the independent variables gets progressively smaller when it becomes closer to 0 or 1 (Hosmer and Lemeshow 1989:6; Sørensen 1989:67). The logit model assumes such a non-linear relationship between the P-value and the independent variables. Formally, the model is written

$L = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_k X_{k,}$ where $L = \ln\left(\frac{P(Y=1)}{1-P(Y=1)}\right)$,

with Y denoting the dependent variable, X_k for k=1,...K denoting the independent variables, and β_k for k=1,...,K denoting the unknown estimated constants describing the average effect of each of the independent variables on Y, when all the other

regression denotes models where there are (also) continuous independent variables present (Sørensen 1989:80 (note 1)).

independent variables are controlled (Aldrich and Nelson 1984:10-11; Sørensen 1989:67-68).[44] The dependent variable L - the logit - will range from $-\infty$ to ∞ for all possible combinations of values of the independent variables, and for all values of the logit, the P(Y=1) will take values within the interval [0,1] (Sørensen 1989:67).

If some of the independent variables are nominal, meaning that values assigned to the categories are merely identifiers, a transformation to dummy variables is required. Dummy variables are dichotomous variables. In general, if a variable with k different categories is to be recoded into dummy variables, k-1 dummies have to be made (Hosmer and Lemeshow 1989: 26). However, it is not unusual to treat categorical variables with many categories as continuous.

The Regression Assumptions

Here, I present the most important regression assumptions, as described by Aldrich and Nelson (1984).

The specification assumptions

- The dependent variable Y is binary, taking two values only. The outcomes on the dependent variables are assumed to be mutually exclusive and exhaustive, meaning that all units can be given either the value 0 or the value 1, and that no units can be given both values.
- What is interesting for us is the value of P(Y=1), which is, the probability that Y equals 1.
- The variation in P is assumed to depend on a number of observable, independent variables X_k, k=1,..., K. This can be written P = P(Y=1|X_1,X_2,..., X_k), or P = P(Y=1|X), where X denotes the set of K independent variables.

[44] These reservations (the *average* effect when the other independent variables are *controlled* (that is, kept at constant values) are essential for the interpretation of the estimated coefficients. I shall not constantly repeat this below. However, it always underlies all the predictions, descriptions and interpretations I make.

- It is assumed that X includes all relevant independent variables.
- It is assumed that each X_k is independent of the dependent variable.
- In standard, linear regression, an assumption of a linear relationship between Y and X is made. Here, the corresponding assumption of the relationship between Y and X can be written

$$P(Y = 1|X) = \frac{e^{(\sum \beta_k X_k)}}{1 + e^{(\sum \beta_k X_k)}},$$

where e is the base of the natural logarithms (approximately 2.7183).

The remaining unknowns, then, are the parameters β_k, β = 1,..., K.

Other assumptions

- Data are assumed to be generated from a random sample of size N. The observations are denoted by the subscript $_i$, i =1,..., N. This requires that the observations on Y are statistically independent of one another.
  Contrary to ordinary linear regression, assumptions of homoscedasticity is not explicitly required, it is implicit in the equation above.
- It is assumed that there is no exact linear relationship among the X_{ik}'s. This assumption implies that
  - N > K;
  - each X_k must have some variation across the observations;
  - no X_k are perfectly correlated.

  Like in ordinary linear regression, also if near though not perfect linear dependencies exist, problems of multicollinearity may occur.

Testing MLE Results/Assessing Goodness of Fit

The significance level denotes the probability that a statistical result as extreme as the one observed would occur if the null hypothesis were true. For instance, a significance level of 5% means that there is a 5% chance that we commit a mistake when rejecting

the null hypothesis. The SPSS-program produces two tests of significance which I intend to use to find out whether the results are significant. The first one is the t-statistic. Like in ordinary linear regression, this is used to test the null hypothesis that a coefficient, e.g. β_k, is 0, which means that the variable X_k on average has no effect on the variance in P, when controlled for the other independent variables (Aldrich and Nelson 1984:54-55). The produced t-ratio is compared with a one or two tailed critical value of the Student's t-distribution with N-K degrees of freedom and an arbitrary, a priori significance level to see if the null hypothesis can be rejected or not (Aldrich and Nelson 1984:55).

Second, a likelihood ratio statistic (c) is produced to test the null hypothesis that all coefficients except the constant term are 0 (Aldrich and Nelson 1984:55-56). c does follows approximately a chi-square distribution when the null hypothesis is true.[45]

Also, a simple test of the model's predictional ability is performed, by comparing how well the predictions made by the model fit the observed data. This is obtained by constructing a classification table, exemplified in table A2.1.

Table A2.1 *Example of classification table for assessing a model's goodness of fit with the observed data. Hypothetical data, reported as absolute numbers. N = 316*

	Predicted		
Observed	Minimal coalitions	Oversized coalitions	*Sum*
Minimal coalitions	40	94	*134*
Oversized coalitions	32	150	*182*
Sum	*72*	*244*	*316*

[45] The formal test of the null hypothesis, then, is performed by comparing c with a critical value (χ^2 (K-1, α)), taken from a table of the chi-square distribution, with K-1 degrees of freedom, and significance level α, where K denotes the number of coefficients assumed to be 0 in the null hypothesis (see Aldrich and Nelson (1984:55-56).

In this hypothetical example, we see that 190 (150 +40) coalitions were correctly predicted, out of total 316. This gives a predictional success of $\left(\frac{190}{316}\right) * 100\% = 60.1\%$. This is somewhat better than a total random guess, which results in a predictional success of 50%. However, the predictional success should also be compared with the univariate distribution. In this example, a total of 182 oversized coalitions are seen, resulting in an observed percentage of $\left(\frac{182}{316}\right) * 100\% = 57.6\%$, implying an improvement in predictional success of 2.5%. We should be aware that the classification table does not reveal the probability distribution of the predictions made: all cases with a probability larger than 0.50 are predicted to be oversized; for the other cases, minimal coalitions are predicted.

Appendix 3: descriptive statistics

This appendix contains descriptive statistics for the variables used in the multivariate analyses in chapters 7 and 8.

Analyses with mayoral coalitions as dependent variable

The number of municipalities analysed is 318. In addition to the removal of 50 municipalities from the complete data-material, as described in chapter 4, 6 municipalities were removed when performing the multivariate analyses, due to lack of data on the variable INCOME.

Table A3.1 *Descriptive statistics of the variables used in the multivariate analysis of mayoral coalitions. N =318 municipalities*

Dependent variable

	Category	%
COALTYPE	Oversized coalitions	60.1
	Not oversized coalitions	39.9
	Sum:	100.0

Continuos variables

	Mean	Std. Dev.	Minimum	Maximum
SIZE	8620	13135	214	143829
(CENTRAL)	3.71	2.52	1	7
INCOME	1679.8	511.2	993.5	5943.1
HH-INDEX	0.27	0.08	0.15	0.71
FEMALE	0.33	0.08	0.12	0.57

Multi-categorical variable

	Category	%
CENTRAL	1	37.7
	2	5.0
	3	8.5
	4	6.9
	5	5.7
	6	11.3
	7	24.8
	Sum:	100.0

Dichotomous variables

	Category	%
ONEPARTY	No single party controls the majority alone	89.0
	One party controls the majority alone	11.0
	Sum:	100.0
BLOCKSOS	Municipal councils where the socialist parties control the majority	18.6
	Municipal councils where the socialist parties do not control the majority	81.4
	Sum:	100.0
BLOCKBOU	Municipal councils where the bourgeois parties control the majority	63.3
	Municipal councils where the bourgeois parties do not control the majority	36.8
	Sum:	100.0
NOBLOCK	Municipal councils where none of the blocks control the majority	18.2
	Municipal councils where one of the blocks control the majority	81.8
	Sum:	100.0
EU	Municipalities where a majority of the voters voted «No» in the EU referendum	85.5
	Municipalities where a majority of the voters voted «Yes» in the EU referendum	14.5
	Sum:	100.0

Analyses with committee coalitions as dependent variables

Table A3.2 contains descriptive statistics for the variables used in the multivariate analysis of committee coalitions in chapter 8. To make the tables more surveyable, «total committee coalitions» and «reduced committee coalitions» are abbreviated «TCC» and «RCC», respectively. The number of municipalities analysed is 383 for total committee coalitions and 408 for reduced committee coalitions. In addition to the removal of municipalities from the complete data-material, as described in chapter 4, 6

municipalities were removed when performing the multivariate analyses, due to lack of data on the variable INCOME.

Table A3.2 *Descriptive statistics of the variables used in the multivariate analyses of committee coalitions.* $N_{Total\ comm.\ coal.} = 383$ *municipalities;* $N_{Red.\ comm.\ coal.} = 408$

Dependent variable

		TCC		RCC	
	Category	%	(N)	%	(N)
COALTYPE	Oversized coalitions	77.5	(297)	53.7	(219)
	Other coalitions	23.5	(86)	46.3	(189)
	Sum:	100.0	(383)	100.0	(408)

Continuos variables

	Mean		Std. Dev.		Minimum		Maximum	
	TCC	RCC	TCC	RCC	TCC	RCC	TCC	RCC
SIZE	9308	9115	17717	17261	214	214	223238	223238
(CENTRAL)	3.66	3.60	2.52	2.51	1	1	7	7
INCOME	1699.6	1710.5	517. 8	531.6	993.5	993.5	5943.1	5943.1
HH-INDEX	0.27	0.27	0.08	0.09	0.15	0.15	0.71	1.00
FEMALE	0.32	0.32	0.08	0.08	0.05	0.05	0.57	0.57

Multi-categorical variable

	Category	TCC	RCC
CENTRAL	1	38.4	39.2
	2	5.2	5.4
	3	8.4	8.6
	4	8.1	7.8
	5	4.7	4.4
	6	10.7	10.8
	7	24.5	23.8
	Sum:	11079.0	18448.0

Dichotomous variables

	Category	% TCC	% RCC
ONEPARTY	No single party controls the majority alone	89.0	87.7
	One party controls the majority alone	11.0	12.3
	Sum:	100.0	100.0
BLOCKSOS	Municipal councils where the socialistic parties control the majority	17.2	19.1
	Municipal councils where the socialistic parties do not control the majority	82.8	80.9
	Sum:	100.0	100.0
BLOCKBOU	Municipal councils where the bourgeois parties control the majority	64.0	61.8
	Municipal councils where the bourgeois parties do not control the majority	36.0	38.2
	Sum:	100.0	100.0
NOBLOCK	Municipal councils where none of the blocks control the majority	18.8	19.1
	Municipal councils where one of the blocks control the majority	81.2	80.9
	Sum:	100.0	100.0
EU	Municipalities where a majority of the voters voted «No» in the EU referendum	85.6	86.0
	Municipalities where a majority of the voters voted «Yes» in the EU referendum	14.4	14.0
	Sum:	100.0	100.0

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